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CLASSIFICATION AND INVENTORY OF WILDLIFE HABITATS IN MARYLAND



A PLANNING REPORT FOR THE
MARYLAND COMMISSION ON HUNTING SPACES

PREPARED BY THE MARYLAND STATE PLANNING DEPARTMENT
IN COOPERATION WITH
MARYLAND DEPARTMENT OF GAME AND INLAND FISH
AND
BUREAU OF OUTDOOR RECREATION, U.S. DEPARTMENT OF THE INTERIOR

January, 1965

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CLASSIFICATION AND INVENTORY
OF
WILDLIFE HABITATS IN MARYLAND

STATE OF MARYLAND
J. MILLARD TAWES, GOVERNOR

Publication

Maryland State Planning Department
James J. O'Donnell, Director
Albert R. Miller, Chief
Research and Special Studies

FOREWORD

In June 1964, the Governor of Maryland, Hon. J. Millard Tawes, in response to a joint resolution from the General Assembly, announced the appointment of the Maryland Commission on Hunting Spaces. This Commission was charged with the formulation of recommendations, leading to an expanded program of state action, for the continued preservation of lands in Maryland to serve the steadily growing recreational demand for hunting areas open to the public. Commission members are as follow:

Mr. Russ J. Neugebauer (Chairman), Assistant Chief, Division of Conservation Education, National Wildlife Federation
Mr. H. C. Buckingham, State Forester, Maryland Department of Forests and Parks
Dr. Gordon M. Cairns, Dean of Agriculture, University of Maryland
Mr. Wilbert J. Coulbourne
Mrs. Justin Duve, Legislative Chairman, National Council, State Garden Clubs, Inc.
Mr. Jerome H. Meredith, Maryland Wildlife Federation
Mr. A. Kenneth Miller, Executive Secretary, Maryland Farm Bureau
Mr. Ernest P. Ogden, Forestry Coordinator, West Virginia Pulp and Paper Company
Mr. Daniel Poole, Conservation Director, Editor and Secretary, Wildlife Management Institute

(Ex-Officio Members)

Delegate R. Samuel Dillon, Maryland General Assembly
Mr. Loring E. Hawes, Assistant Attorney General, State of Maryland
Senator John Thomas Parran, Maryland General Assembly
Mr. Ernest A. Vaughn, Director, Maryland Department of Game and Inland Fish

Among the basic data that the Commission felt necessary for their evaluation in developing a recommended program was a general inventory of the current wildlife habitat for the principal game and fur-bearing species in Maryland—essentially an up-to-date classification of the land cover types important in wildlife management. As such information relates directly to the overall pattern of land use throughout the state, the Commission requested assistance in designing a study procedure from the State Planning Department, which has underway research in land use, "open space," and outdoor recreation.

The State Planning Department, recognizing the special purpose for which the land cover classification was intended, asked the Commission to consider the possible use of an aerial photographic interpretation survey in the identification of wildlife habitats, in that recent (1962-1964) aerial photographic coverage for Maryland was available. This inventory technique would enable the study to be completed as rapidly as possible and at minimum expense. The Commission subsequently requested the State Planning Department to proceed with arrangements for employing this study method.

The Division of Planning and Surveys, Bureau of Outdoor Recreation, U. S. Department of the Interior, has on its expert staff Mr. Henry W. Dill, Jr., who has conducted detailed studies of wildlife habitats utilizing aerial photographic interpretation. Accordingly, the State Planning Department

and the Chairman of the Commission on Hunting Spaces initiated discussions with Mr. Dill and the Bureau to determine if the Maryland wildlife habitat research could provide the Bureau with a useful laboratory for more refined surveys employing aerial photography. The Bureau was much interested in participating in the project and permitted Mr. Dill to undertake this Maryland study beginning October 15, 1964, without cost to the State of Maryland.

The aerial photographic interpretation was based upon 1962-1964 photographs for the entire state, supplemented by material from the Maryland Soil and Water Conservation Needs Inventory completed in 1960. The 1962-1964 photographic coverage was purchased and furnished by the Maryland Department of Game and Inland Fish, together with data on wildlife habitats in Maryland previously compiled by that Department. The dates of the photography for each county are as follow:

Allegany	1962
Anne Arundel	1963
Baltimore (including Baltimore City)	1964
Calvert	1964
Caroline	1964
Carroll	1963
Cecil	1964
Charles	1964
Dorchester	1964
Frederick	1964
Garrett	1962
Harford	1964
Howard	1963
Kent	1963
Montgomery	1963
Prince George's	1963
Queen Anne's	1963
St. Mary's	1964
Somerset	1964
Talbot	1964
Washington	1963
Wicomico	1964
Worcester	1964

Approximately 57 per cent of the state's coverage was photographed in 1964, with 34 per cent in 1963 and only nine per cent in 1962.

The photographic interpretation involved analysis by Mr. Dill of more than 2,500 100-acre sample plots distributed randomly throughout the state. These plots represent a four per cent sample of the state's total land area and provide a reliable estimate of the extent of various wildlife habitats within geographic areas comprising at least 60,000 - 100,000 acres. The data on habitat classes are presented in this report by subregions of the state, each consisting generally of four to six

quadrangles as delineated by the U. S. Geological Survey. Subregions average about 135,000 acres in size. In the average subregion, the statistical odds are about two to one that the estimates contained in this report do not differ from the true or actual conditions by more than 24 per cent, plus or minus. For example, if the report estimates that approximately 12 per cent (16,000 acres) of the average subregions area is in a certain habitat class, chances are about two to one that the real acreage is within 24 per cent of the estimate, which would be the range 12,160 - 19,840 acres.

The subregional data are grouped by regions that conform to the approximate boundaries of the wildlife management regions of the state recognized by the Department of Game and Inland Fish in the administration of its programs. The counties comprising each region are as follow:

- Region I: Garrett, Allegany, and Washington
- Region II: Frederick, Carroll, Montgomery, and Howard
- Region III: Anne Arundel, Prince George's, Calvert, Charles, and St. Mary's
- Region IV: Baltimore, Harford, and Cecil, (and Baltimore City)
- Region V: Kent, Queen Anne's, Caroline, and Talbot
- Region VI: Dorchester, Wicomico, Worcester, and Somerset

The estimates of the extent of each habitat class increase in accuracy as data for successively larger geographic areas are aggregated. This means that estimates for a total region are more accurate than estimates for each of its subregions, and estimates for the entire state are more accurate than for each of its regions.

The report is divided into three sections. The first section is a description of the habitat classes identified in the survey and includes ground-level and low-oblique photographs of each habitat class. The source of each photograph is indicated by these abbreviations: (GIF)--Maryland Department of Game and Inland Fish; (FP)--Maryland Department of Forests and Parks; and (SCS)--Maryland State Office, Soil Conservation Service, U. S. Department of Agriculture.

Also in the first section is a discussion of the relative importance of each habitat class in the management of the principal game and fur-bearing species of Maryland. This discussion of species/habitat relationships was prepared by biologists of the Department of Game and Inland Fish.

The second section of the report presents in tabular form the data on the approximate acreage and percentage of total land area covered by the various habitat classes for the state, each region, and each subregion. No estimates are provided for the extent of a habitat class where such a class comprised less than one per cent of a subregion's land area. Also included in this section are measurements of the incidence of "edge" and incidence of "large water areas," which are important special features of the land cover.

The third section of the report presents in map form data on concentrations of each habitat class throughout the state. For each habitat class, a state map shows the percentage of each subregion's land area occupied by the class. At a glance, these maps enable the reader to determine the areas of the state in which each habitat class is most or least prevalent.

The State Planning Department, which served as coordinator in the conduct of this project and assembled the data as presented in the report, wishes to express its sincere appreciation to Mr. Russ J. Neugebauer, Chairman of the Maryland Commission on Hunting Spaces; Mr. Ernest A. Vaughn (Director), Mr. George B. Shields (Assistant Director), Mr. Ralph A. Bitely (Chief, Wildlife Management), Mr. Vernon D. Stotts and Mr. Earl H. Hodil (Biologists), of the Department of Game and Inland Fish; and Mr. Henry W. Dill, Jr., and the staff of the Division of Planning and Surveys, Bureau of Outdoor Recreation, U. S. Department of the Interior, for the exceptional cooperation and assistance they gave. A particular word of thanks goes to Mr. Dill, whose professional skill in research applications of aerial photographic interpretation for land utilization inventory and planning is primarily responsible for the depth and high degree of accuracy of the study. Grateful acknowledgment further is extended to Mr. Malcolm E. King (GIF), Mr. Adna R. Bond (FP), and Mr. Verne M. Bathurst (SCS), for their help in locating and furnishing the photographs shown in this report. Lastly, we are much indebted to the Resource Development Economics Division, Economic Research Service, U. S. Department of Agriculture, which provided microfilm copies of materials containing information on each of the more than 2,500 sample plots inventoried; the project's completion was greatly facilitated by the provision of these materials.

The State Planning Department is pleased to have been invited to coordinate and assist in this study. We hope that the report will prove to be a valuable contribution to the continuing improvement of wildlife management and public hunting policies and programs in Maryland.

Gerald F. Vaughn, Planner
George T. Evans, Draftsman

SECTION I--Explanation of the habitat classification system and relationship to the habitat requirements of Maryland wildlife

The classification system designed for this aerial photographic inventory of wildlife habitats in Maryland is a refinement of the system used by Mr. Dill in his 1961 studies for the Outdoor Recreation Resources Review Commission.^{1/} It is based upon the system originally introduced by the Massachusetts Cooperative Wildlife Research Unit. The Maryland study involves a determination and measurement of the extent of habitat classes according to a 16-class system, with subclasses. In addition, the incidence of "edge" is recorded as an indicator of overall habitat value, and the incidence of "large water areas" is given because of their importance as resting places for waterfowl. Definitions, photographs, and the importance of each habitat class to the various wildlife species are presented in the discussion which follows.

The upland forest habitats are categorized by four tree species groups, plus orchards and abandoned orchards. The species groups are: hardwood, softwood, mixed with hardwood dominant, and mixed with softwood dominant. The relatively pure hardwood and softwood designations pertain to situations where more than 75 per cent of the timber stand is either hardwood or softwood. The mixed forest designation with hardwood or softwood dominance refers to situations where 51-75 per cent of the timber stand is either hardwood or softwood.

Each timber stand is sub-classified in two other ways: 1) maturity of the stand, and 2) density of the stand. Maturity is approximated by height estimates, with uneven or mature referring to stands where heights either vary greatly or are predominantly 40 or more feet, respectively, and with young referring to heights predominantly under 40 feet. Density of the stand is termed good or fair if the stand has 51-100 per cent crown closure and poor with 30-50 per cent crown closure. Brush areas having less than 30 per cent crown closure were not classified as forests but instead as idle and abandoned farmland.

Orchards are defined as fruit orchards in production, with either managed young trees or mature bearing trees. Nurseries and planted nut trees are included in this class. Abandoned orchards are those no longer managed for fruit production, generally now infested with brushy vegetation.

Wetland habitats are designated as wooded swamp, shrub swamp, fresh-water marsh, salt-water marsh, and agricultural wet meadow. Wooded swamp essentially represents the mature timber growing along rivers, streams, and smaller water-courses. Such timber periodically is inundated by water. Wooded swamp generally is comprised of hardwood species. However, it includes cypress in that cypress, although a softwood, is not evergreen and does shed its foliage in winter.

^{1/} See ORRRC Study Report No. 8, Potential New Sites for Outdoor Recreation in the Northeast; (U. S. Government Printing Office: Washington, D. C., 1962); pp. 45-55.

Shrub swamp is the often inundated, stunted vegetative growth situation occurring along watercourses. The vegetation typically is dwarfed gum, ash, aspen, and assorted bushes. Fresh-water marsh refers to semi-inundated areas having reedy vegetation, such as cattail. Salt-water marsh is the semi-inundated area dominated by vegetation adaptable to saline conditions, such as salt-marsh cordgrass and needlerush. Agricultural wet meadow includes pasture and hay lands with wet springy areas, including peat bogs. The wet meadow has occasional clusters of swamp or marsh vegetation.

Upland non-forest habitats are identified as idle and abandoned farmland, less intensive agriculture, and intensive agriculture. Idle and abandoned farmland includes areas formerly cultivated, now reverting to forest. The vegetative cover ranges from sedge and low brush to poorly stocked timber stands (up to 30 per cent crown closure).

Less intensive agriculture includes cultivated lands interspersed with stone walls, large hedgerows, or small patches of wetland, forest, pasture, and idle and abandoned farmland. Intensive agriculture consists of nearly uninterrupted open continuous cultivated fields, with no stone walls, large hedgerows, or small patches of uncultivated land.

Two types of land cover having virtually no value as wildlife habitat in their present condition also were classified. First, sparsely vegetated areas such as sand and gravel pits, strip-mines, spoil, dunes, and similar denuded situations were measured. Such bare areas afford little food or protective cover, but under managed revegetation programs they often can become useful wildlife habitats again.

Second, urban and built-up areas were identified. It is doubtful whether such developed areas can be expected to again produce significant populations of wildlife, in view of the relatively low and rapidly declining amount of vegetative cover in these densely settled areas, the disturbance to wildlife caused by normal human activities, the presence of numerous predatory dogs and cats, and the extremely high hunting pressure near cities. However, it may be desirable to attempt the reservation of land for wildlife preserves or refuges in metropolitan areas, where no hunting would be allowed. Such preserves can have high aesthetic value as "open space" and as field laboratories for nature study.

Finally, the incidence of "edge" and the incidence of "large water areas" were measured. Edge refers in general to the brush occurring along the sides of open fields, wetlands, or sparsely vegetated areas, which is so favored by wildlife as a feeding and/or nesting area and as a protective hiding place. Incidence of edge is measured as the percentage of sample plots on which edge was found in significant quantities. Sample plots having present both forest and non-forest cover types--with the minor cover type generally comprising at least 30 per cent of the plot's area--were defined as possessing significant quantities of edge. In cases where certain non-forest openings had shapes that produced lengthy amounts of

edge even though the minor cover type did not comprise at least 30 per cent of a plot's area, such plots were included as having significant edge. An example is the case of rights-of-way for power lines cut through woodland.

The incidence of large water areas refers to the occurrence on sample plots of streams, rivers and bays greater than 20 feet wide, and to ponds, lakes, and reservoirs greater than two acres surface area in size. Incidence is measured as the percentage of sample plots having present any of these large water areas, which are highly valuable as resting places for waterfowl.

In seeking to reserve lands for public hunting areas, it is essential to understand the relationships between each habitat class and the various game and fur-bearing species. An individual habitat class may be of high importance to the life of a certain species, while this class may rate as having only negligible importance to the life of another species. Not all habitat classes are valued equally by the various species, and the different levels of importance are fundamental considerations in wildlife management. To illustrate further, if public policy is developed which would set aside lands primarily for deer hunting in response to the rising popularity of deer hunting, the resulting program must give first attention to the locations of good deer habitat. Similarly, a program for reserving lands for waterfowl hunting must be geared to the locations of suitable waterfowl habitat.

In order for this inventory to be fully meaningful in locating the habitat classes most important to each Maryland wildlife species (game or fur-bearing), a chart showing the value or importance of each habitat class in the management of each species has been especially prepared for the report by biologists of the Department of Game and Inland Fish. The relationships indicated in the chart which follows are based upon extensive research findings and field observations throughout the state.

The relationships expressed in this chart are valid only for those areas of the state in which the climate and habitat conditions combine to provide natural range for each species. For example, although idle and abandoned farmland rates as a highly important habitat class for bob-white quail in a mild climate area, the more adverse climate of another area serves to deter this species from inhabiting the harsher area. As a result, idle and abandoned farmland in the adverse-climate area has little practical value as a bob-white quail habitat, for few quail are found there. Thus, the chart applies only for areas of the state where the species under concern is in fact prevalent--its natural range.

Many wildlife species in Maryland are found in quantity throughout the state. However, the game and fur-bearing species with limited natural ranges are identified as follow:

<u>Species</u>	<u>Extent of Natural Range</u>
Sika Deer	Subregions VIB and VIJ
Bryant Fox Squirrel	Subregions VC, VE, VIA-VIC, and VIH
Eastern Fox Squirrel	Subregions IE-IG, IID, and IIG
Wild Turkey	Subregions IA-IH, VIA-VIC, and VIF-VIJ
Pheasant (Ring-neck) (Iranian)	Subregions IE-IG, IIA-IIC, and IVA-IVD Currently protected from hunting by law— subregions throughout regions V and VI
Ruffed Grouse	Subregions IA-IH, and IIA-IID
Bob-white Quail	Throughout Maryland except in subregions IA-IC and IH
Beaver	Subregions IA-IF, IH, IIIE, IIIF, and IVB-IVD
Otter	Subregions IIIA-IIIH, IVC, IVD, IVF, VA-VF, and VIA-VIJ
Rails and gallinules	Subregions IIIB, IIID, IIIG-IIIH, IVC, IVD, IVF, VA, VC, VE, VIA, VIB, VIF, VIG, and VIJ
Jacksnipe	Subregions IIID, IIIG-IIIH, VA, VC, VE, VIA, VIB, VIF, VIG, and VIJ
Geese	Subregions IF, IG, IID, IIG, IIIB, IIID, IIIE, IIIG-IIIH, IVC, IVD, IVF, VA, VC, VE, VIA-VIC, and VIF-VII
Brant	Subregions IIIB, IIID, IIIG-IIIH, IVC, IVD, IVF, VA, VC, VE, VIA, VIB, VIF, VIG, and VIJ
Ducks	Subregions IF, IG, IID, IIG, IIIB, IIID, IIIE, IIIG-IIIH, IVC, IVD, IVF, VA, VC, VE, VIA-VIC, and VIF-VII
Coot	Subregions IIIB, IIID, IIIG-IIIH, IVC, IVD, IVF, VA, VC, VE, VIA, VIB, VIF, VIG, and VIJ.

Relative importance of the habitat classes to each game and fur-bearing species in Maryland:

H= high importance

M= moderate importance

L= low importance

No entry means negligible importance

<u>Habitat Classes</u>	<u>Species</u>			
	<u>Whitetail & Sika Deer</u>	<u>Gray & Red Squirrels</u>	<u>Fox Squirrels</u>	<u>Cottontail Rabbit</u>
1. Hardwood Forest				
Uneven or mature:				
Good or fair stand	M	H	H	M
Poor stand	-	-	-	-
Young:				
Good or fair stand	H	H	H	H
Poor stand	-	-	-	-
2. Softwood Forest				
Uneven or mature:				
Good or fair stand	L	L	M	M
Poor stand	-	-	-	-
Young:				
Good or fair stand	M	-	-	H
Poor stand	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)				
Uneven or mature:				
Good or fair stand	M	M	H	M
Poor stand	-	-	-	-
Young:				
Good or fair stand	M	-	-	H
Poor stand	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)				
Uneven or mature:				
Good or fair stand	L	L	M	M
Poor stand	-	-	-	-
Young:				
Good or fair stand	L	-	-	H
Poor stand	-	-	-	-
5. Orchard	M	-	-	M
6. Abandoned Orchard	M	-	-	M
7. Wooded Swamp	M	-	-	-
8. Shrub Swamp	M	-	-	-
9. Fresh-Water Marsh	M	-	-	M
10. Salt-Water Marsh	L	-	-	-
11. Agr. Wet Meadow	M	-	-	M
12. Idle and Aband. Fmld.	L	-	-	H
13. Less Intensive Agr.	H	M	H	H
14. Intensive Agr.	-	-	-	L
15. Sparse Vegetation	-	-	-	-
16. Urban and Built-Up	-	-	-	-
Incidence of Edge	H	M	H	H
Incidence of Large Water Areas	-	-	-	-

Habitat/Species Relationships (cont.)

<u>Habitat Classes</u>	<u>Species</u>				
	<u>Wild Turkey</u>	<u>Pheasant</u>	<u>Ruffed Grouse</u>	<u>Bob-white Quail</u>	<u>Woodcock</u>
1. Hardwood Forest					
Uneven or mature:					
Good or fair stand	H	-	M	-	H
Poor stand	-	-	-	-	-
Young:					
Good or fair stand	-	H	H	M	M
Poor stand	-	-	-	-	-
2. Softwood Forest					
Uneven or mature:					
Good or fair stand	M	-	L	-	M
Poor stand	-	-	-	-	-
Young:					
Good or fair stand	-	-	L	H	M
Poor stand	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)					
Uneven or mature:					
Good or fair stand	M	-	H	-	M
Poor stand	-	-	-	-	-
Young:					
Good or fair stand	-	H	M	M	M
Poor stand	-	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)					
Uneven or mature:					
Good or fair stand	M	-	L	-	M
Poor stand	-	-	-	-	-
Young:					
Good or fair stand	-	-	-	H	M
Poor stand	-	-	-	-	-
5. Orchard	-	M	L	-	-
6. Abandoned Orchard	-	M	L	-	-
7. Wooded Swamp	-	-	-	-	M
8. Shrub Swamp	-	-	-	-	H
9. Fresh-Water Marsh	-	H	-	M	H
10. Salt-Water Marsh	-	-	-	L	-
11. Agr. Wet Meadow	-	H	-	M	M
12. Idle and Aband. Fmld.	L	H	M	H	L
13. Less Intensive Agr.	M	H	-	H	-
14. Intensive Agr.	-	L	-	L	-
15. Sparse Vegetation	-	-	-	-	-
16. Urban and Built-Up	-	-	-	-	-
Incidence of Edge	M	H	M	H	L
Incidence of Large Water Areas	-	-	-	-	-

Habitat/Species Relationships (cont.)

<u>Habitat Classes.</u>	<u>Species</u>						
	<u>Mourning</u> <u>Dove</u>	<u>Gray</u> <u>Fox</u>	<u>Red</u> <u>Fox</u>	<u>Rac-</u> <u>coon</u>	<u>Opos-</u> <u>sum</u>	<u>Beav-</u> <u>er</u>	<u>Otter</u>
1. Hardwood Forest							
Uneven or mature:							
Good or fair stand	H	-	-	H	L	-	-
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	H	H	L	H	L	L
Poor stand	-	-	-	-	-	-	-
2. Softwood Forest							
Uneven or mature:							
Good or fair stand	-	-	M	L	L	-	-
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)							
Uneven or mature:							
Good or fair stand	-	M	H	H	M	L	L
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)							
Uneven or mature:							
Good or fair stand	-	-	-	L	M	-	-
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-
5. Orchard	L	-	-	L	L	-	-
6. Abandoned Orchard	L	-	-	L	L	-	-
7. Wooded Swamp	-	-	-	H	L	H	H
8. Shrub Swamp	-	-	-	H	L	H	H
9. Fresh-Water Marsh	-	L	L	H	L	L	H
10. Salt-Water Marsh	-	L	L	M	L	-	-
11. Agr. Wet Meadow	-	L	L	L	M	L	L
12. Idle and Aband. Fmld.	M	M	M	L	M	-	-
13. Less Intensive Agr.	H	H	H	H	H	-	-
14. Intensive Agr.	L	-	-	-	-	-	-
15. Sparse Vegetation	-	-	-	-	-	-	-
16. Urban and Built-Up	-	-	-	-	-	-	-
Incidence of Edge	M	M	M	M	M	L	-
Incidence of Large Water Areas	-	-	-	-	-	L	M

Habitat/Species Relationships (cont.)

<u>Habitat Classes</u>	<u>Species</u>			<u>Wood-</u> <u>chuck</u>	<u>Rails &</u> <u>Gallinules</u>	<u>Jack-</u> <u>snipe</u>
	<u>Mink</u>	<u>Musk-</u> <u>rat</u>	<u>Skunk</u>			
1. Hardwood Forest						
Uneven or mature:						
Good or fair stand	-	-	M	L	-	-
Poor stand	-	-	-	-	-	-
Young:						
Good or fair stand	L	-	H	L	-	-
Poor stand	-	-	-	-	-	-
2. Softwood Forest						
Uneven or mature:						
Good or fair stand	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-
Young:						
Good or fair stand	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)						
Uneven or mature:						
Good or fair stand	L	-	-	-	-	-
Poor stand	-	-	-	-	-	-
Young:						
Good or fair stand	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)						
Uneven or mature:						
Good or fair stand	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-
Young:						
Good or fair stand	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-
5. Orchard	-	-	-	-	-	-
6. Abandoned Orchard	-	-	-	-	-	-
7. Wooded Swamp	H	L	-	-	-	-
8. Shrub Swamp	H	L	-	-	L	-
9. Fresh-Water Marsh	H	H	-	-	H	H
10. Salt-Water Marsh	L	M	-	-	H	H
11. Agr. Wet Meadow	L	L	-	-	L	L
12. Idle and Aband. Fld.	-	-	M	M	-	-
13. Less Intensive Agr.	L	-	M	H	-	-
14. Intensive Agr.	-	-	-	-	-	-
15. Sparse Vegetation	-	-	-	-	-	-
16. Urban and Built-Up	-	-	-	-	-	-
Incidence of Edge	L	M	M	M	M	L
Incidence of Large Water Areas	L	L	-	-	M	M

Habitat/Species Relationships (cont.)

<u>Habitat Classes</u>	<u>Species</u>			
	<u>Geese</u>	<u>Brant</u>	<u>Ducks</u>	<u>Coot</u>
1. Hardwood Forest				
Uneven or mature:				
Good or fair stand	-	-	L	-
Poor stand	-	-	-	-
Young:				
Good or fair stand	-	-	L	-
Poor stand	-	-	-	-
2. Softwood Forest				
Uneven or mature:				
Good or fair stand	-	-	-	-
Poor stand	-	-	-	-
Young:				
Good or fair stand	-	-	-	-
Poor stand	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)				
Uneven or mature:				
Good or fair stand	-	-	L	-
Poor stand	-	-	-	-
Young:				
Good or fair stand	-	-	L	-
Poor stand	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)				
Uneven or mature:				
Good or fair stand	-	-	-	-
Poor stand	-	-	-	-
Young:				
Good or fair stand	-	-	-	-
Poor stand	-	-	-	-
5. Orchard	-	-	-	-
6. Abandoned Orchard	-	-	-	-
7. Wooded Swamp	-	-	M	-
8. Shrub Swamp	-	-	M	L
9. Fresh-Water Marsh	M	L	H	H
10. Salt-Water Marsh	M	H	H	M
11. Agr. Wet Meadow	-	-	M	L
12. Idle and Aband. Fmld.	-	-	-	-
13. Less Intensive Agr.	H	L	L	L
14. Intensive Agr.	-	-	-	-
15. Sparse Vegetation	-	-	-	-
16. Urban and Built-Up	-	-	-	-
Incidence of Edge	H	L	H	M
Incidence of Large Water Areas	H	H	H	H



Hardwood Forest, Uneven or Mature, Good or Fair Stand (GIF)



Hardwood Forest, Uneven or Mature, Poor Stand (FP)



Hardwood Forest, Young, Good or Fair Stand (FP)



Hardwood Forest, Young, Poor Stand (FP)



Softwood Forest, Uneven or Mature, Good or Fair Stand (SCS)



Softwood Forest, Uneven or Mature, Poor Stand (SCS)



Softwood Forest, Young, Good or Fair Stand (SCS)



Softwood Forest, Young, Poor Stand (SCS)



Mixed Forest (Hardwood Dominant), Uneven or Mature, Good or Fair Stand (GIF)



Mixed Forest (Hardwood Dominant), Uneven or Mature, Poor Stand (FP)



Mixed Forest (Hardwood Dominant), Young, Good or Fair Stand (FP)



Mixed Forest (Hardwood Dominant), Young, Poor Stand (FP)



Mixed Forest (Softwood Dominant), Uneven or Mature, Good or Fair Stand (FP)



Mixed Forest (Softwood Dominant), Uneven or Mature, Poor Stand (FP)



Mixed Forest (Softwood Dominant), Young, Good or Fair Stand (FP)



Mixed Forest (Softwood Dominant), Young, Poor Stand (FP)



Orchard (SCS)



Abandoned Orchard (GIF)



Wooded Swamp (GIF)



Shrub Swamp (GIF)



Fresh-Water Marsh (SCS)



Salt-Water Marsh (SCS)



Agricultural Wet Meadow (SCS)



Idle and Abandoned Farmland (FP)



Less Intensive Agriculture (GIF)



Intensive Agriculture (SCS)



Sparse Vegetation (SCS)



Urban and Built-Up (SCS)

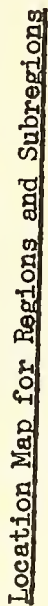


Incidence of Edge (SCS)



Incidence of Large Water Areas (GIF)

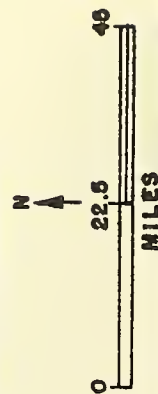
SECTION II—Tables



REGION BOUNDARY

SUBREGION BOUNDARY

COUNTY BOUNDARY



EXTENT OF HABITAT CLASSES: APPROXIMATE ACREAGE AND PERCENTAGE OF LAND AREA

STATE OF MARYLAND

<u>Habitat Classes</u>	<u>1,000 Acres</u>	<u>Percent</u>
1. Hardwood Forest		
Uneven or mature:		
Good or fair stand	371	5.9
Poor stand	15	0.2
Young:		
Good or fair stand	311	4.9
Poor stand	5	0.1
2. Softwood Forest		
Uneven or mature:		
Good or fair stand	22	0.3
Poor stand	3	*
Young:		
Good or fair stand	44	0.7
Poor stand	-	-
3. Mixed Forest (Hwd. Dom.)		
Uneven or mature:		
Good or fair stand	314	5.0
Poor stand	58	0.9
Young:		
Good or fair stand	186	2.9
Poor stand	25	0.4
4. Mixed Forest (Sftwd. Dom.)		
Uneven or mature:		
Good or fair stand	454	7.2
Poor stand	136	2.2
Young:		
Good or fair stand	164	2.6
Poor stand	5	0.1
5. Orchard	5	0.1
6. Abandoned Orchard	3	*
7. Wooded Swamp	212	3.4
8. Shrub Swamp	5	0.1
9. Fresh-Water Marsh	72	1.1
10. Salt-Water Marsh	168	2.7
11. Agr. Wet Meadow	6	0.1
12. Idle and Aband. Fmld.	124	2.0
13. Less Intensive Agr.	1753	27.8
14. Intensive Agr.	1273	20.1
15. Sparse Vegetation	15	0.2
16. Urban and Built-Up	570	9.0
TOTAL	6319	100.0
Incidence of Edge	(Not applicable)	50.9
Incidence of Large Water Areas	(Not applicable)	18.8

*Less than 0.1 per cent.

EXTENT OF HABITAT CLASSES: APPROXIMATE ACREAGE IN THE REGION AND SUBREGIONS

Region I : Garrett, Allegany, and Washington Counties

Habitat Classes	Subregions								TOTAL REGION
	A	B	C	D	E	F	G	H	
	-----1,000 Acres-----								
1. Hardwood Forest									
Uneven or mature:									
Good or fair stand	31	66	43	52	25	2	-	30	249
Poor stand	-	3	-	2	-	-	-	-	5
Young:									
Good or fair stand	34	66	20	36	25	9	9	30	229
Poor stand	-	-	-	2	-	-	-	-	2
2. Softwood Forest									
Uneven or mature:									
Good or fair stand	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)									
Uneven or mature:									
Good or fair stand	-	3	2	2	10	9	14	3	43
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	2	5	2	2	-	6	7	8	32
Poor stand	-	-	-	-	3	-	-	-	3
4. Mixed Forest (Sftwd. Dom.)									
Uneven or mature:									
Good or fair stand	-	-	-	-	3	2	-	-	5
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	-	-	-	-	5	-	-	-	5
Poor stand	-	-	-	-	-	-	-	-	-
5. Orchard	-	-	-	-	-	2	-	-	2
6. Abandoned Orchard	-	-	-	-	-	-	3	-	3
7. Wooded Swamp	-	-	-	-	-	-	-	-	-
8. Shrub Swamp	-	-	-	-	-	-	-	-	-
9. Fresh-Water Marsh	-	-	-	-	-	-	-	-	-
10. Salt-Water Marsh	-	-	-	-	-	-	-	-	-
11. Agr. Wet Meadow	-	3	-	-	-	-	-	-	3
12. Idle and Aband. Fmld.	2	3	4	-	-	2	5	3	19
13. Less Intensive Agr.	40	15	9	9	15	43	53	37	221
14. Intensive Agr.	7	5	7	-	-	29	46	14	108
15. Sparse Vegetation	-	-	4	-	-	-	-	-	4
16. Urban and Built-Up	-	3	20	-	-	4	7	3	37
TOTAL	116	172	111	105	86	108	144	128	970

Incidence of Edge (Not applicable)

Incidence of Large Water Areas (Not applicable)

EXTENT OF HABITAT CLASSES: PERCENTAGE OF REGION'S AND SUBREGIONS' LAND AREA

Region I : Garrett, Allegany, and Washington Counties

Habitat Classes	Subregions								TOTAL REGION
	A	B	C	D	E	F	G	H	
	Percent								
1. Hardwood Forest									
Uneven or mature:									
Good or fair stand	27	38	38	49	30	2	-	24	25.6
Poor stand	-	2	-	2	-	-	-	-	0.5
Young:									
Good or fair stand	29	38	18	34	30	8	6	24	23.6
Poor stand	-	-	-	2	-	-	-	-	0.2
2. Softwood Forest									
Uneven or mature:									
Good or fair stand	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)									
Uneven or mature:									
Good or fair stand	-	2	2	2	12	8	10	2	4.4
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	2	3	2	2	-	6	5	6	3.4
Poor stand	-	-	-	-	3	-	-	-	0.2
4. Mixed Forest (Sftwd. Dom.)									
Uneven or mature:									
Good or fair stand	-	-	-	-	3	2	-	-	0.5
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	-	-	-	-	6	-	-	-	0.5
Poor stand	-	-	-	-	-	-	-	-	-
5. Orchard	-	-	-	-	-	2	-	-	0.2
6. Abandoned Orchard	-	-	-	-	-	-	2	-	0.2
7. Wooded Swamp	-	-	-	-	-	-	-	-	-
8. Shrub Swamp	-	-	-	-	-	-	-	-	-
9. Fresh-Water Marsh	-	-	-	-	-	-	-	-	-
10. Salt-Water Marsh	-	-	-	-	-	-	-	-	-
11. Agr. Wet Meadow	-	2	-	-	-	-	-	-	0.2
12. Idle and Aband. Fmld.	2	2	4	-	-	2	3	2	1.9
13. Less Intensive Agr.	34	8	8	9	16	39	37	29	22.8
14. Intensive Agr.	6	3	6	-	-	27	32	11	11.4
15. Sparse Vegetation	-	-	4	-	-	-	-	-	0.5
16. Urban and Built-Up	-	2	18	-	-	4	5	2	3.9
TOTAL	100	100	100	100	100	100	100	100	100.0
Incidence of Edge	56	57	32	61	24	35	21	50	42.7
Incidence of Large Water Areas	15	4	8	9	12	21	2	9	9.5

EXTENT OF HABITAT CLASSES: APPROXIMATE ACREAGE IN THE REGION AND SUBREGIONS

Region II : Frederick, Carroll, Montgomery, and
Howard Counties

<u>Habitat Classes</u>	<u>Subregions</u>								TOTAL REGION
	A	B	C	D	E	F	G	H	
	- - - - -1,000 Acres- - - - -								
1. Hardwood Forest									
Uneven or mature:									
Good or fair stand	5	-	5	-	3	3	9	3	28
Poor stand	-	-	-	-	-	6	-	-	6
Young:									
Good or fair stand	9	-	2	-	-	-	-	3	14
Poor stand	-	-	-	-	-	-	-	-	-
2. Softwood Forest									
Uneven or mature:									
Good or fair stand	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)									
Uneven or mature:									
Good or fair stand	14	2	7	26	13	16	16	16	110
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	18	5	-	17	3	3	2	3	51
Poor stand	-	-	-	-	-	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)									
Uneven or mature:									
Good or fair stand	9	2	5	-	-	3	-	3	22
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	5	-	5	-	4	-	-	-	14
Poor stand	-	-	-	-	-	-	-	-	-
5. Orchard	-	-	-	-	-	-	-	-	-
6. Abandoned Orchard	-	-	-	-	-	-	-	-	-
7. Wooded Swamp	-	-	-	-	-	-	-	-	-
8. Shrub Swamp	-	-	-	-	-	-	-	-	-
9. Fresh-Water Marsh	-	-	-	-	-	-	-	-	-
10. Salt-Water Marsh	-	-	-	-	-	-	-	-	-
11. Agr. Wet Meadow	-	-	-	-	-	-	-	-	-
12. Idle and Aband. Fmld.	2	2	-	-	3	3	5	5	20
13. Less Intensive Agr.	38	60	70	56	85	100	93	78	580
14. Intensive Agr.	21	50	22	33	34	7	28	5	200
15. Sparse Vegetation	-	-	-	-	-	-	-	3	3
16. Urban and Built-Up	2	2	7	7	3	7	25	38	91
TOTAL	123	123	123	139	148	148	178	157	1139

Incidence of Edge (Not applicable)

Incidence of Large Water Areas (Not applicable)

EXTENT OF HABITAT CLASSES: PERCENTAGE OF REGION'S AND SUBREGIONS' LAND AREA

Region II : Frederick, Carroll, Montgomery, and

Howard Counties

Habitat Classes	Subregions								TOTAL REGION
	A	B	C	D	E	F	G	H	
	- - - - -Percent- - - - -								
1. Hardwood Forest									
Uneven or mature:									
Good or fair stand	4	-	4	-	2	2	5	2	2.4
Poor stand	-	-	-	-	-	4	-	-	0.4
Young:									
Good or fair stand	7	-	2	-	-	-	-	2	1.1
Poor stand	-	-	-	-	-	-	-	-	-
2. Softwood Forest									
Uneven or mature:									
Good or fair stand	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)									
Uneven or mature:									
Good or fair stand	11	2	6	19	9	11	9	10	9.2
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	15	4	-	12	2	2	1	2	3.9
Poor stand	-	-	-	-	-	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)									
Uneven or mature:									
Good or fair stand	7	2	4	-	-	2	-	2	1.8
Poor stand	-	-	-	-	-	-	-	-	-
Young:									
Good or fair stand	4	-	4	-	3	-	-	-	1.3
Poor stand	-	-	-	-	-	-	-	-	-
5. Orchard	-	-	-	-	-	-	-	-	-
6. Abandoned Orchard	-	-	-	-	-	-	-	-	-
7. Wooded Swamp	-	-	-	-	-	-	-	-	-
8. Shrub Swamp	-	-	-	-	-	-	-	-	-
9. Fresh-Water Marsh	-	-	-	-	-	-	-	-	-
10. Salt-Water Marsh	-	-	-	-	-	-	-	-	-
11. Agr. Wet Meadow	-	-	-	-	-	-	-	-	-
12. Idle and Aband. Fmld.	2	2	-	-	2	2	3	3	1.8
13. Less Intensive Agr.	31	48	56	40	57	67	52	50	51.8
14. Intensive Agr.	17	40	18	24	23	5	16	3	18.0
15. Sparse Vegetation	-	-	-	-	-	-	-	2	0.2
16. Urban and Built-Up	2	2	6	5	2	5	14	24	8.1
TOTAL	100	100	100	100	100	100	100	100	100.0
Incidence of Edge	17	29	43	12	35	64	22	32	32.2
Incidence of Large Water Areas	4	4	16	14	3	11	6	5	7.5

EXTENT OF HABITAT CLASSES: APPROXIMATE ACREAGE IN THE REGION AND SUBREGIONS

Region III : Anne Arundel, Prince George's, Calvert,
Charles, and St. Mary's Counties

<u>Habitat Classes</u>	<u>Subregions</u>									TOTAL REGION
	A	B	C	D	E	F	G	H	I	
	- - - - - 1,000 Acres - - - - -									
1. Hardwood Forest										
Uneven or mature:										
Good or fair stand	3	9	2	5	-	3	-	-	-	22
Poor stand	-	-	-	-	4	-	-	-	-	4
Young:										
Good or fair stand	-	9	2	5	4	-	-	-	-	20
Poor stand	-	-	-	-	3	-	-	-	-	3
2. Softwood Forest										
Uneven or mature:										
Good or fair stand	-	-	-	-	-	-	-	3	-	3
Poor stand	-	-	-	-	-	-	-	-	-	-
Young:										
Good or fair stand	-	-	-	-	-	-	-	-	13	13
Poor stand	-	-	-	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)										
Uneven or mature:										
Good or fair stand	24	9	13	8	10	15	2	7	-	88
Poor stand	-	-	-	8	3	9	4	11	9	44
Young:										
Good or fair stand	3	20	2	3	-	9	2	4	-	43
Poor stand	-	-	-	-	-	4	2	7	-	13
4. Mixed Forest (Sftwd. Dom.)										
Uneven or mature:										
Good or fair stand	21	26	11	16	27	37	34	28	6	206
Poor stand	-	-	5	14	20	19	13	14	6	91
Young:										
Good or fair stand	9	-	2	-	13	4	9	3	10	50
Poor stand	-	-	-	-	-	-	2	-	-	2
5. Orchard	-	-	-	-	-	-	-	-	-	-
6. Abandoned Orchard	-	-	-	-	-	-	-	-	-	-
7. Wooded Swamp	9	3	-	14	4	4	4	8	-	46
8. Shrub Swamp	5	-	-	-	-	-	-	-	-	5
9. Fresh-Water Marsh	-	-	-	9	7	-	7	3	3	29
10. Salt-Water Marsh	-	-	-	-	-	-	-	-	-	-
11. Agr. Wet Meadow	-	-	-	-	-	-	-	-	-	-
12. Idle and Aband. Fmld.	-	-	13	3	7	3	-	4	-	30
13. Less Intensive Agr.	16	22	71	53	22	28	23	27	13	275
14. Intensive Agr.	3	-	14	12	13	9	4	18	25	98
15. Sparse Vegetation	-	-	-	-	-	-	-	-	-	-
16. Urban and Built-Up	81	32	45	5	3	4	4	3	10	137
TOTAL	174	130	180	155	140	148	110	140	95	1272

Incidence of Edge (Not applicable)

Incidence of Large Water Areas (Not applicable)

EXTENT OF HABITAT CLASSES: PERCENTAGE OF REGION'S AND SUBREGIONS' LAND AREA

Region III : Anne Arundel, Prince George's, Calvert,
Charles, and St. Mary's Counties

<u>Habitat Classes</u>	<u>Subregions</u>									TOTAL REGION
	A	B	C	D	E	F	G	H	I	
	Percent									
1. Hardwood Forest										
Uneven or mature:										
Good or fair stand	2	7	1	3	-	2	-	-	-	1.6
Poor stand	-	-	-	-	3	-	-	-	-	0.4
Young:										
Good or fair stand	-	7	1	3	3	-	-	-	-	1.6
Poor stand	-	-	-	-	2	-	-	-	-	0.2
2. Softwood Forest										
Uneven or mature:										
Good or fair stand	-	-	-	-	-	-	-	2	-	0.2
Poor stand	-	-	-	-	-	-	-	-	-	-
Young:										
Good or fair stand	-	-	-	-	-	-	-	-	14	1.0
Poor stand	-	-	-	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)										
Uneven or mature:										
Good or fair stand	14	7	7	5	7	10	2	5	-	6.3
Poor stand	-	-	-	5	2	6	4	8	9	3.5
Young:										
Good or fair stand	2	15	1	2	-	6	2	3	-	3.1
Poor stand	-	-	-	-	-	3	2	5	-	1.2
4. Mixed Forest (Sftwd. Dom.)										
Uneven or mature:										
Good or fair stand	12	20	6	10	20	24	30	20	6	16.4
Poor stand	-	-	3	9	14	13	12	10	6	7.4
Young:										
Good or fair stand	5	-	1	-	9	3	8	2	11	3.9
Poor stand	-	-	-	-	-	-	2	-	-	0.2
5. Orchard	-	-	-	-	-	-	-	-	-	-
6. Abandoned Orchard	-	-	-	-	-	-	-	-	-	-
7. Wooded Swamp	5	2	-	9	3	3	4	6	-	3.9
8. Shrub Swamp	3	-	-	-	-	-	-	-	-	0.4
9. Fresh-Water Marsh	-	-	-	6	5	-	6	2	3	2.3
10. Salt-Water Marsh	-	-	-	-	-	-	-	-	-	-
11. Agr. Wet Meadow	-	-	-	-	-	-	-	-	-	-
12. Idle and Aband. Fmld.	-	-	7	2	5	2	-	3	-	2.3
13. Less Intensive Agr.	9	17	40	35	16	19	20	19	14	22.1
14. Intensive Agr.	2	-	8	8	9	6	4	13	26	7.3
15. Sparse Vegetation	-	-	-	-	-	-	-	-	-	-
16. Uroan and Built-Up	46	25	25	3	2	3	4	2	11	13.7
TOTAL	100	100	100	100	100	100	100	100	100	100.0
Incidence of Edge	42	46	70	80	78	81	84	73	71	69.9
Incidence of Large Water Areas	15	29	21	33	22	25	18	24	46	25.0

EXTENT OF HABITAT CLASSES: APPROXIMATE ACREAGE IN THE REGION AND SUBREGION

Region IV : Baltimore, Harford, and Cecil Counties
(and Baltimore City)

<u>Habitat Classes</u>	<u>Subregions</u>						TOTAL REGION
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	
	-----1,000 Acres-----						
1. Hardwood Forest							
Uneven or mature:							
Good or fair stand	3	13	16	9	13	13	67
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	8	3	5	5	11	13	45
Poor stand	-	-	-	-	-	-	-
2. Softwood Forest							
Uneven or mature:							
Good or fair stand	-	-	-	-	-	3	3
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	-	-	-	2	-	2
Poor stand	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)							
Uneven or mature:							
Good or fair stand	5	16	11	5	4	6	47
Poor stand	-	-	-	6	-	-	6
Young:							
Good or fair stand	10	-	-	9	6	-	25
Poor stand	-	-	-	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)							
Uneven or mature:							
Good or fair stand	3	-	-	2	4	3	12
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	-	3	2	2	-	7
Poor stand	-	-	-	-	-	-	-
5. Orchard	-	-	3	-	-	-	3
6. Abandoned Orchard	-	-	-	-	-	-	-
7. Wooded Swamp	-	-	-	-	-	-	-
8. Shrub Swamp	-	-	-	-	-	-	-
9. Fresh-Water Marsh	-	-	-	2	-	-	2
10. Salt-Water Marsh	-	-	-	-	-	-	-
11. Agr. Wet Meadow	-	-	3	-	-	-	3
12. Idle and Aband. Fmld.	5	-	-	2	15	6	28
13. Less Intensive Agr.	116	87	59	31	25	36	354
14. Intensive Agr.	15	13	11	71	13	6	129
15. Sparse Vegetation	-	-	-	-	-	-	-
16. Urban and Built-Up	3	-	45	9	116	41	214
TOTAL	168	132	156	153	211	127	947

Incidence of Edge (Not applicable)

Incidence of Large Water Areas (Not applicable)

EXTENT OF HABITAT CLASSES: PERCENTAGE OF REGION'S AND SUBREGIONS' LAND AREA

Region IV : Baltimore, Harford, and Cecil Counties

(and Baltimore City)

<u>Habitat Classes</u>	<u>Subregions</u>						TOTAL REGION
	A	B	C	D	E	F	
	-----Percent-----						
1. Hardwood Forest							
Uneven or mature:							
Good or fair stand	2	10	10	6	6	10	6.8
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	5	2	3	3	5	10	4.3
Poor stand	-	-	-	-	-	-	-
2. Softwood Forest							
Uneven or mature:							
Good or fair stand	-	-	-	-	-	2	0.3
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	-	-	-	1	-	0.3
Poor stand	-	-	-	-	-	-	-
3. Mixed Forest (Hwd. Dom.)							
Uneven or mature:							
Good or fair stand	3	12	7	3	2	5	4.9
Poor stand	-	-	-	4	-	-	0.8
Young:							
Good or fair stand	6	-	-	6	3	-	3.0
Poor stand	-	-	-	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)							
Uneven or mature:							
Good or fair stand	2	-	-	1	2	2	1.4
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	-	2	1	1	-	0.8
Poor stand	-	-	-	-	-	-	-
5. Orchard	-	-	2	-	-	-	0.3
6. Abandoned Orchard	-	-	-	-	-	-	-
7. Wooded Swamp	-	-	-	-	-	-	-
8. Shrub Swamp	-	-	-	-	-	-	-
9. Fresh-Water Marsh	-	-	-	1	-	-	0.3
10. Salt-Water Marsh	-	-	-	-	-	-	-
11. Agr. Wet Meadow	-	-	2	-	-	-	0.3
12. Idle and Aband. Fmld.	3	-	-	1	7	5	3.0
13. Less Intensive Agr.	68	66	38	21	12	28	36.9
14. Intensive Agr.	9	10	7	47	6	5	14.3
15. Sparse Vegetation	-	-	-	-	-	-	-
16. Urban and Built-Up	2	-	29	6	55	33	22.3
TOTAL	100	100	100	100	100	100	100.0
Incidence of Edge	73	39	49	53	26	45	46.8
Incidence of Large Water Areas	8	6	18	34	9	20	15.7

EXTENT OF HABITAT CLASSES: APPROXIMATE ACREAGE IN THE REGION AND SUBREGIONS

Region V : Kent, Queen Anne's, Caroline, and Talbot Counties

<u>Habitat Classes</u>	<u>Subregions</u>						TOTAL REGION
	A	B	C	D	E	F	
	- - - - - - - -1,000 Acres- - - - -						
1. Hardwood Forest							
Uneven or mature:							
Good or fair stand	5	-	-	-	-	-	5
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	3	-	-	-	-	-	3
Poor stand	-	-	-	-	-	-	-
2. Softwood Forest							
Uneven or mature:							
Good or fair stand	-	-	-	-	-	4	4
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)							
Uneven or mature:							
Good or fair stand	6	6	-	-	3	-	15
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	5	6	3	4	5	2	25
Poor stand	-	-	-	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)							
Uneven or mature:							
Good or fair stand	-	9	3	18	10	9	49
Poor stand	-	-	-	-	3	-	3
Young:							
Good or fair stand	-	9	-	8	5	4	26
Poor stand	-	-	-	-	-	-	-
5. Orchard	-	-	-	-	-	-	-
6. Abandoned Orchard	-	-	-	-	-	-	-
7. Wooded Swamp	-	9	-	-	-	4	13
8. Shrub Swamp	-	-	-	-	-	-	-
9. Fresh-Water Marsh	3	3	3	-	-	6	15
10. Salt-Water Marsh	-	-	10	-	-	-	10
11. Agr. Wet Meadow	-	-	-	-	-	-	-
12. Idle and Aband. Fmld.	-	3	-	-	5	-	8
13. Less Intensive Agr.	12	15	29	14	5	15	90
14. Intensive Agr.	88	88	83	103	58	102	522
15. Sparse Vegetation	-	-	-	-	-	2	2
16. Urban and Built-Up	6	-	-	3	5	2	16
TOTAL	128	148	131	150	99	150	806

Incidence of Edge (Not applicable)

Incidence of Large Water Areas (Not applicable)

EXTENT OF HABITAT CLASSES: PERCENTAGE OF REGION'S AND SUBREGIONS' LAND AREA

Region V : Kent, Queen Anne's, Caroline, and Talbot Counties

<u>Habitat Classes</u>	<u>Subregions</u>						TOTAL REGION
	A	B	C	D	E	F	
	Percent						
1. Hardwood Forest							
Uneven or mature:							
Good or fair stand	4	-	-	-	-	-	0.6
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	2	-	-	-	-	-	0.3
Poor stand	-	-	-	-	-	-	-
2. Softwood Forest							
Uneven or mature:							
Good or fair stand	-	-	-	-	-	3	0.6
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)							
Uneven or mature:							
Good or fair stand	5	4	-	-	3	-	1.8
Poor stand	-	-	-	-	-	-	-
Young:							
Good or fair stand	4	4	2	3	5	1	3.1
Poor stand	-	-	-	-	-	-	-
4. Mixed Forest (Sftwd. Dom.)							
Uneven or mature:							
Good or fair stand	-	6	2	12	10	6	6.1
Poor stand	-	-	-	-	3	-	0.3
Young:							
Good or fair stand	-	6	-	5	5	3	3.1
Poor stand	-	-	-	-	-	-	-
5. Orchard	-	-	-	-	-	-	-
6. Abandoned Orchard	-	-	-	-	-	-	-
7. Wooded Swamp	-	6	-	-	-	3	1.5
8. Shrub Swamp	-	-	-	-	-	-	-
9. Fresh-Water Marsh	2	2	2	-	-	4	1.8
10. Salt-Water Marsh	-	-	8	-	-	-	1.2
11. Agr. Wet Meadow	-	-	-	-	-	-	-
12. Idle and Aband. Fmld.	-	2	-	-	5	-	0.9
13. Less Intensive Agr.	9	10	22	9	5	10	10.8
14. Intensive Agr.	69	60	64	69	59	68	65.5
15. Sparse Vegetation	-	-	-	-	-	1	0.3
16. Urban and Built-Up	5	-	-	2	5	1	2.1
TOTAL	100	100	100	100	100	100	100.0
Incidence of Edge	44	70	54	68	62	69	61.5
Incidence of Large Water Areas	33	28	38	14	51	33	31.2

EXTENT OF HABITAT CLASSES: APPROXIMATE ACREAGE IN THE REGION AND SUBREGIONS

Region VI : Dorchester, Wicomico, Worcester,
and Somerset Counties

<u>Habitat Classes</u>	<u>Subregions</u>										TOTAL REGION
	A	B	C	D	E	F	G	H	I	J	
	-----1,000 Acres-----										
1. Hardwood Forest											
Uneven or mature:											
Good or fair stand	-	-	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-	-	-
Young:											
Good or fair stand	-	-	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-	-	-
2. Softwood Forest											
Uneven or mature:											
Good or fair stand	2	-	2	5	-	-	-	-	3	-	12
Poor stand	-	-	-	-	-	-	-	3	-	-	3
Young:											
Good or fair stand	9	-	-	-	10	-	-	4	3	3	29
Poor stand	-	-	-	-	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)											
Uneven or mature:											
Good or fair stand	6	-	-	-	2	-	-	-	3	-	11
Poor stand	2	-	-	-	-	-	-	-	3	3	8
Young:											
Good or fair stand	6	-	-	-	-	-	-	-	4	-	10
Poor stand	-	-	-	3	-	-	-	-	-	6	9
4. Mixed Forest (Sftwd. Dom.)											
Uneven or mature:											
Good or fair stand	15	19	5	31	20	7	-	20	29	14	160
Poor stand	2	-	2	12	2	3	-	7	14	-	42
Young:											
Good or fair stand	17	-	5	9	7	-	-	13	11	-	62
Poor stand	-	-	-	-	-	3	-	-	-	-	3
5. Orchard	-	-	-	-	-	-	-	-	-	-	-
6. Abandoned Orchard	-	-	-	-	-	-	-	-	-	-	-
7. Wooded Swamp	15	50	27	5	29	-	-	4	20	3	153
8. Shrub Swamp	-	-	-	-	-	-	-	-	-	-	-
9. Fresh-Water Marsh	-	19	7	-	-	-	-	-	-	-	26
10. Salt-Water Marsh	-	22	28	-	-	10	54	31	-	13	158
11. Agr. Wet Meadow	-	-	-	-	-	-	-	-	-	-	-
12. Idle and Aband. Fmld.	6	2	-	-	2	3	-	3	3	-	19
13. Less Intensive Agr.	21	2	30	9	38	61	4	7	47	14	233
14. Intensive Agr.	79	10	16	45	12	3	-	48	3	-	216
15. Sparse Vegetation	-	-	-	-	-	-	-	-	-	6	6
16. Urban and Built-Up	7	-	2	9	-	3	4	-	-	-	25
TOTAL	187	124	124	128	122	93	62	140	143	62	1185

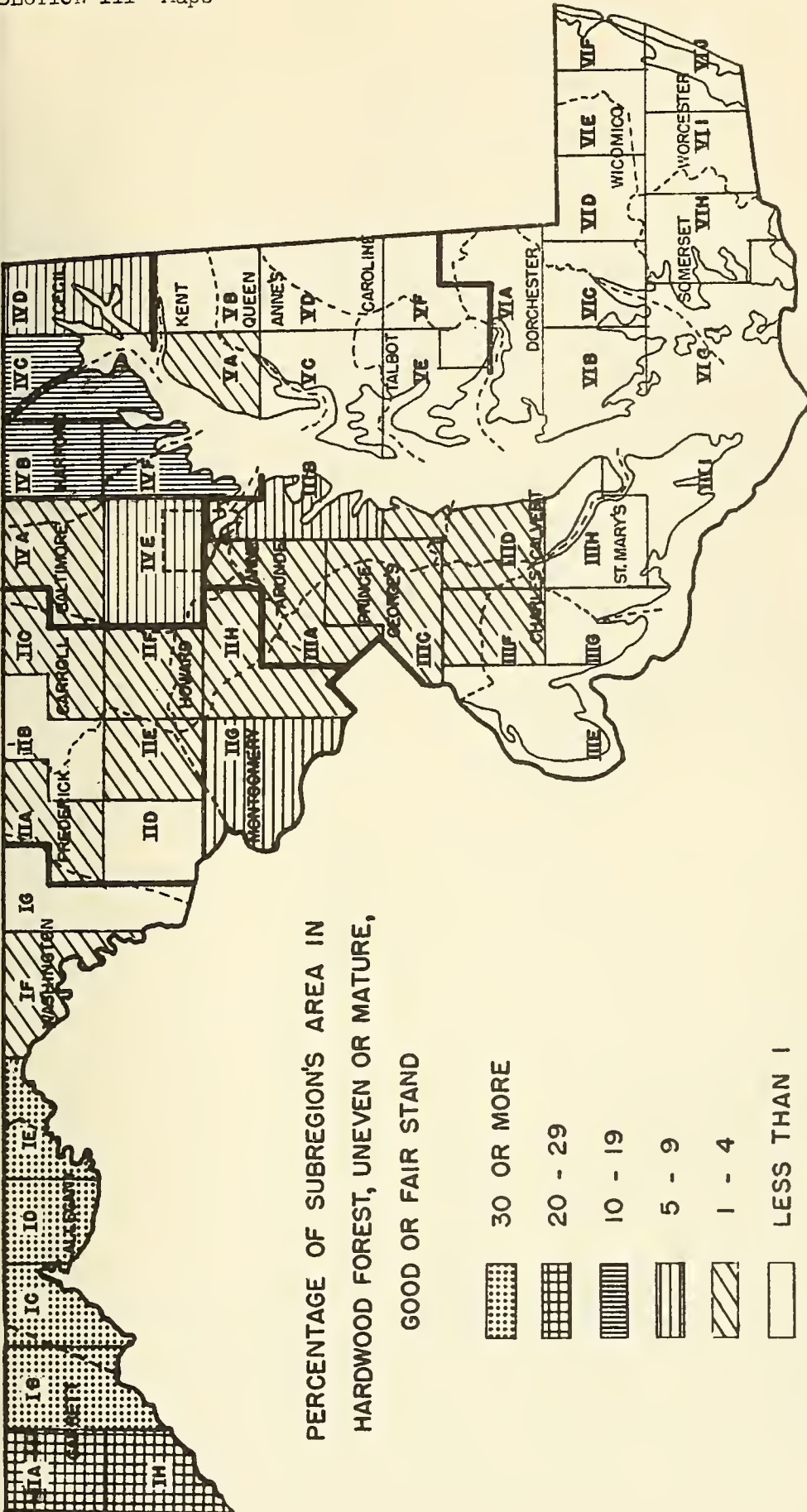
Incidence of Edge (Not applicable)

Incidence of Large Water Areas (Not applicable)

EXTENT OF HABITAT CLASSES: PERCENTAGE OF REGION'S AND SUBREGIONS' LAND AREA

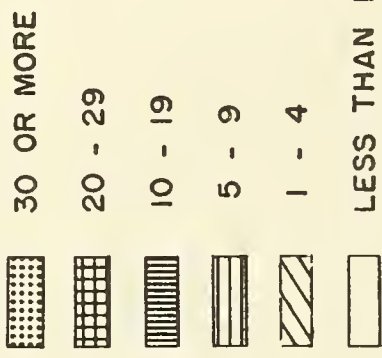
Region VI : Dorchester, Wicomico, Worcester,
and Somerset Counties

<u>Habitat Classes</u>	<u>Subregions</u>										TOTAL REGION
	A	B	C	D	E	F	G	H	I	J	
	-----Percent-----										
1. Hardwood Forest											
Uneven or mature:											
Good or fair stand	-	-	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-	-	-
Young:											
Good or fair stand	-	-	-	-	-	-	-	-	-	-	-
Poor stand	-	-	-	-	-	-	-	-	-	-	-
2. Softwood Forest											
Uneven or mature:											
Good or fair stand	1	-	2	4	-	-	-	-	2	-	1.1
Poor stand	-	-	-	-	-	-	-	2	-	-	0.2
Young:											
Good or fair stand	5	-	-	-	8	-	-	3	2	5	2.7
Poor stand	-	-	-	-	-	-	-	-	-	-	-
3. Mixed Forest (Hdwd. Dom.)											
Uneven or mature:											
Good or fair stand	3	-	-	-	2	-	-	-	2	-	0.9
Poor stand	1	-	-	-	-	-	-	-	2	5	0.7
Young:											
Good or fair stand	3	-	-	-	-	-	-	-	3	-	0.9
Poor stand	-	-	-	2	-	-	-	-	-	10	0.7
4. Mixed Forest (Sftwd. Dom.)											
Uneven or mature:											
Good or fair stand	8	15	4	24	16	7	-	14	20	23	13.7
Poor stand	1	-	2	9	2	3	-	5	10	-	3.8
Young:											
Good or fair stand	9	-	4	7	6	-	-	9	8	-	5.6
Poor stand	-	-	-	-	-	3	-	-	-	-	0.2
5. Orchard	-	-	-	-	-	-	-	-	-	-	-
6. Abandoned Orchard	-	-	-	-	-	-	-	-	-	-	-
7. Wooded Swamp	8	40	22	4	24	-	-	3	14	5	13.0
8. Shrub Swamp	-	-	-	-	-	-	-	-	-	-	-
9. Fresh-Water Marsh	-	15	6	-	-	-	-	-	-	-	2.0
10. Salt-Water Marsh	-	18	22	-	-	11	88	22	-	19	11.9
11. Agr. Wet Meadow	-	-	-	-	-	-	-	-	-	-	-
12. Idle and Aband. Fmld.	3	2	-	-	2	3	-	2	2	-	1.6
13. Less Intensive Agr.	11	2	23	7	30	67	6	5	33	23	19.5
14. Intensive Agr.	43	8	13	36	10	3	-	35	2	-	19.1
15. Sparse Vegetation	-	-	-	-	-	-	-	-	-	10	0.4
16. Urban and Built-Up	4	-	2	7	-	3	6	-	-	-	2.0
TOTAL	100	100	100	100	100	100	100	100	100	100	100.0
Incidence of Edge	61	38	57	62	50	59	6	55	47	48	51.6
Incidence of Large Water Areas	26	35	36	16	6	21	67	34	15	29	25.6



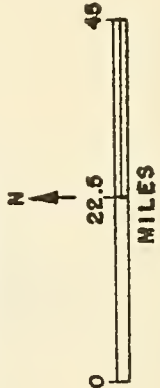
PERCENTAGE OF SUBREGION'S AREA IN
HARDWOOD FOREST, UNEVEN OR MATURE,

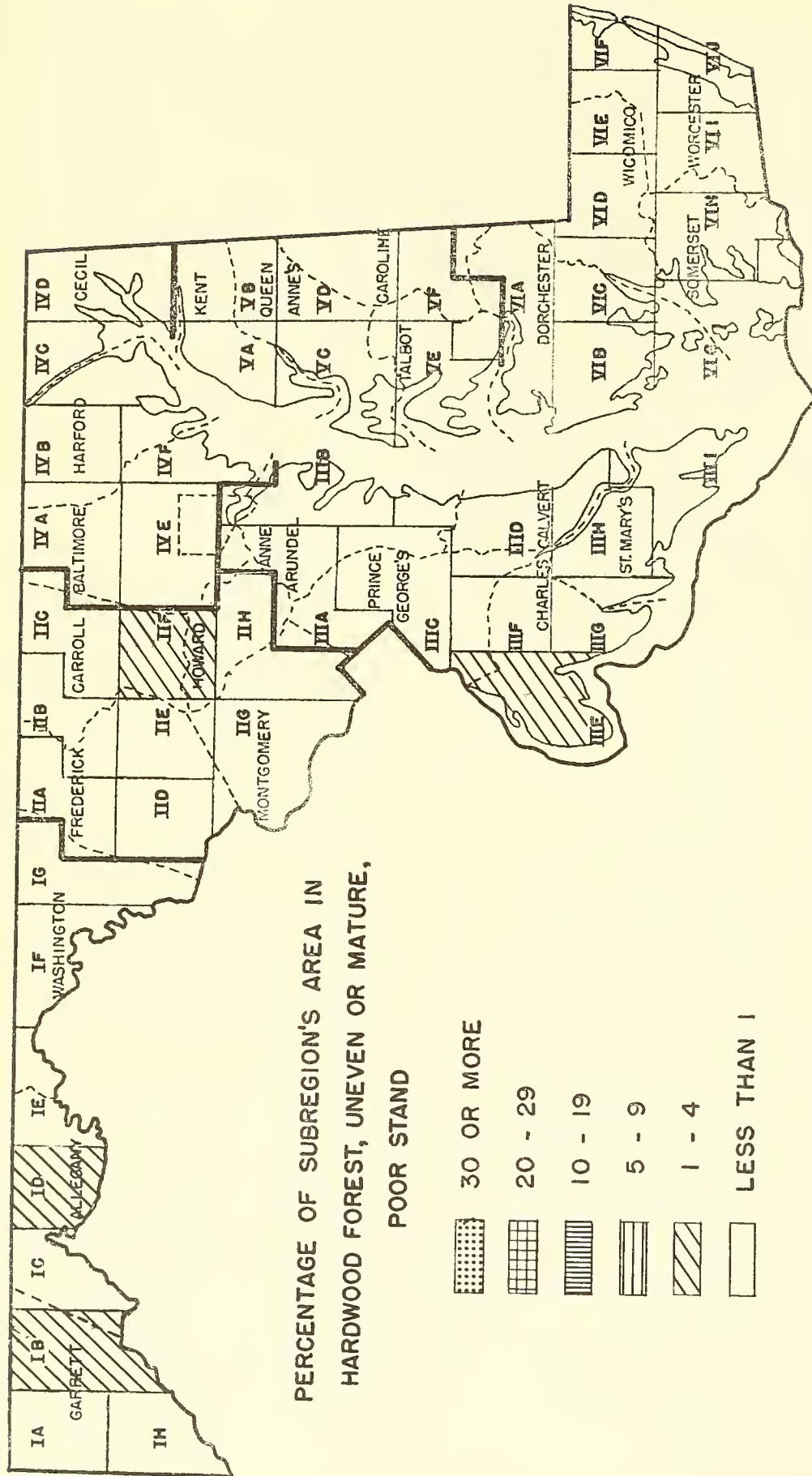
GOOD OR FAIR STAND



REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY

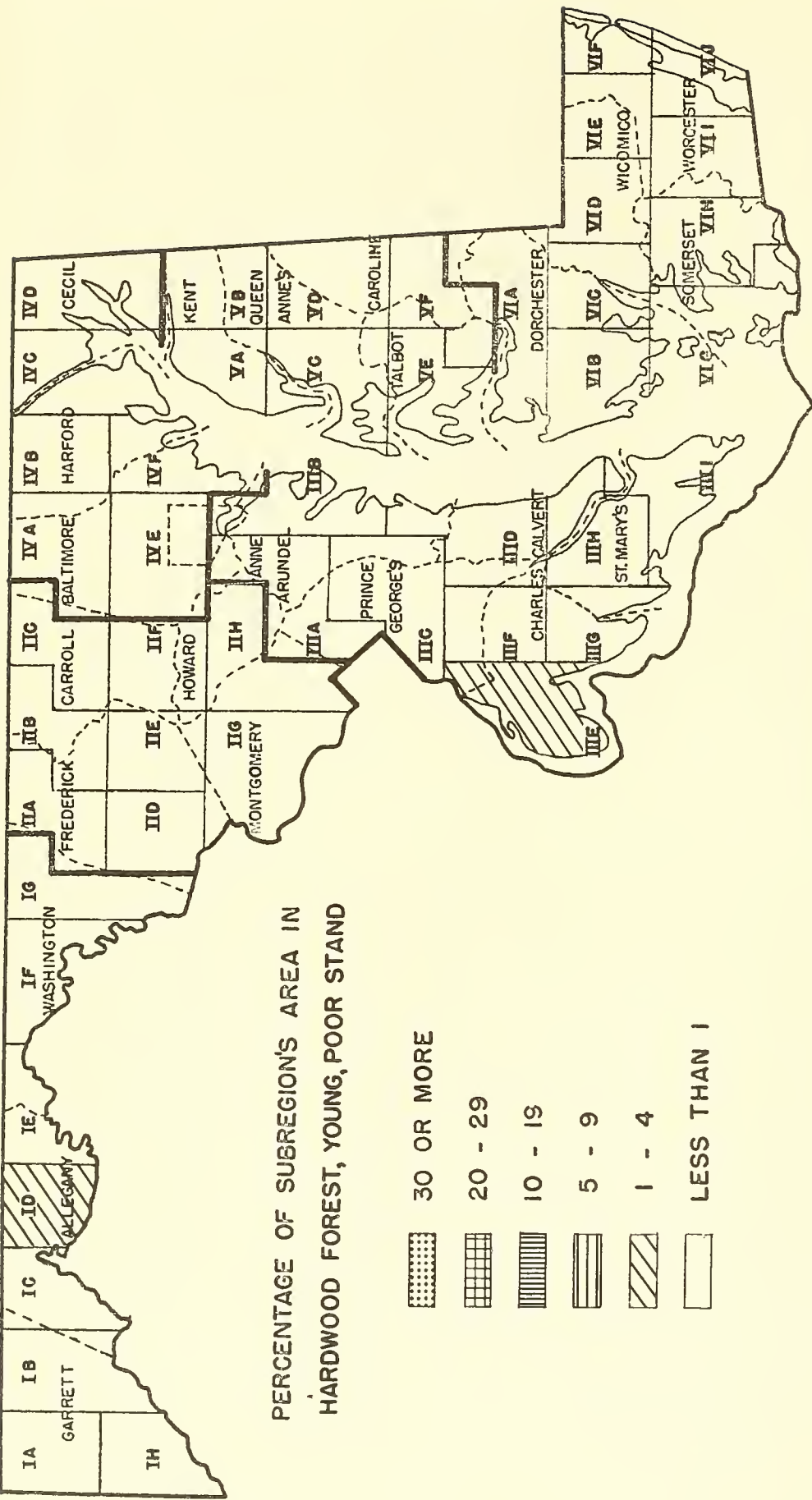




REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY

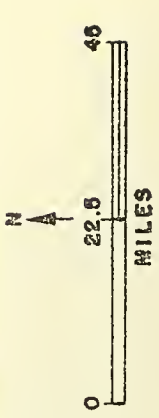




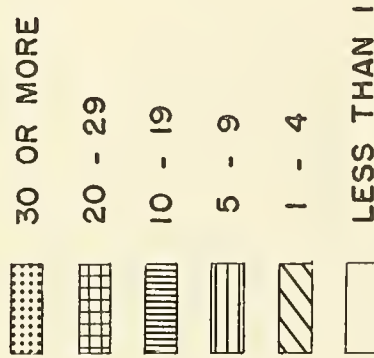
PERCENTAGE OF SUBREGION'S AREA IN
HARDWOOD FOREST, YOUNG, POOR STAND

- 30 OR MORE
- 20 - 29
- 10 - 19
- 5 - 9
- 1 - 4
- LESS THAN 1

REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

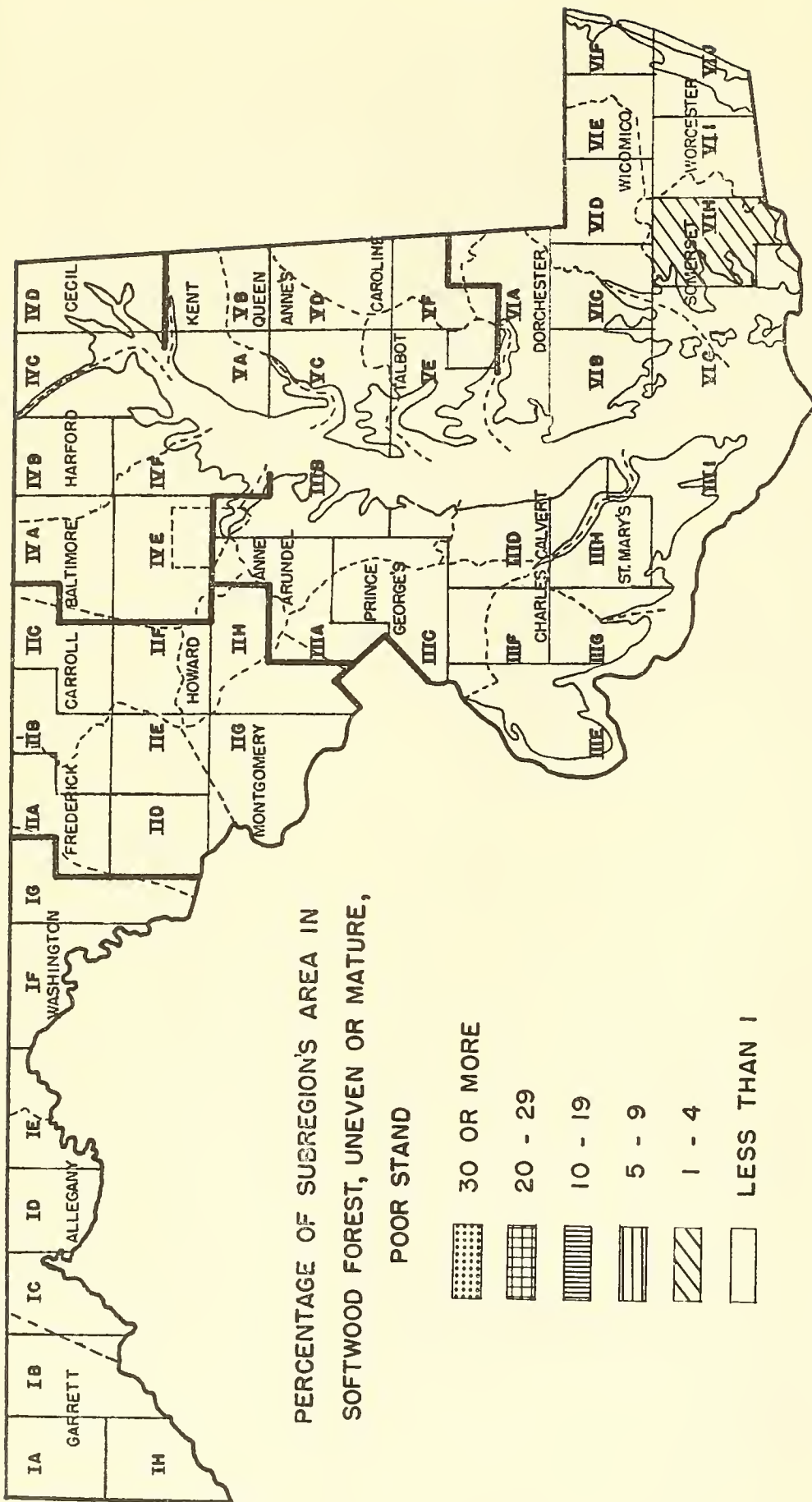


PERCENTAGE OF SUBREGION'S AREA IN
SOFTWOOD FOREST, UNEVEN OR MATURE,
GOOD OR FAIR STAND



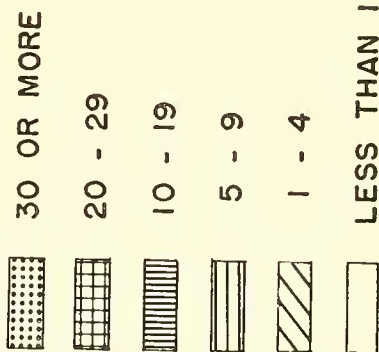
REGION: ROMAN NUMERAL REGION BOUNDARY
SUBREGION: LETTER SUBREGION BOUNDARY
COUNTY: NAME COUNTY BOUNDARY





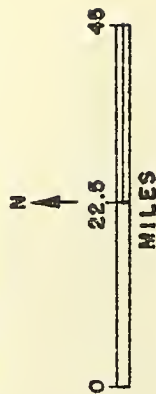
PERCENTAGE OF SUBREGION'S AREA IN
SOFTWOOD FOREST, UNEVEN OR MATURE,

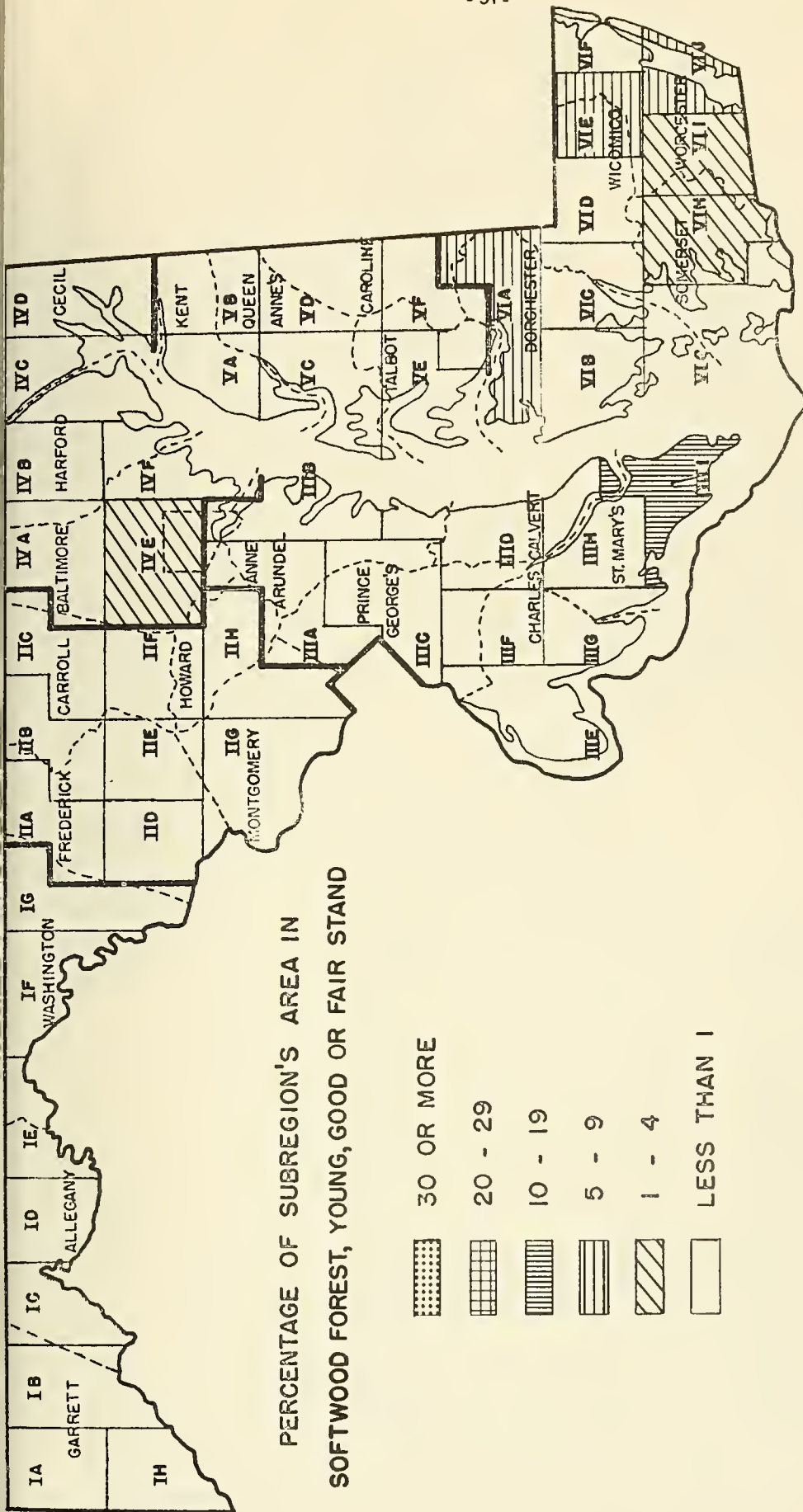
POOR STAND



REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

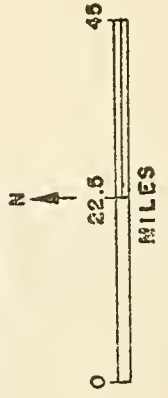
REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY

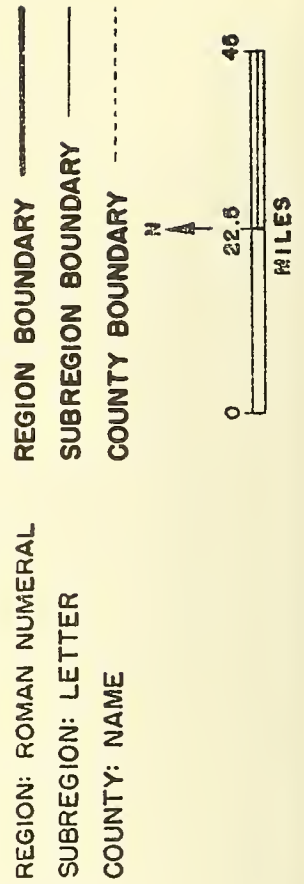
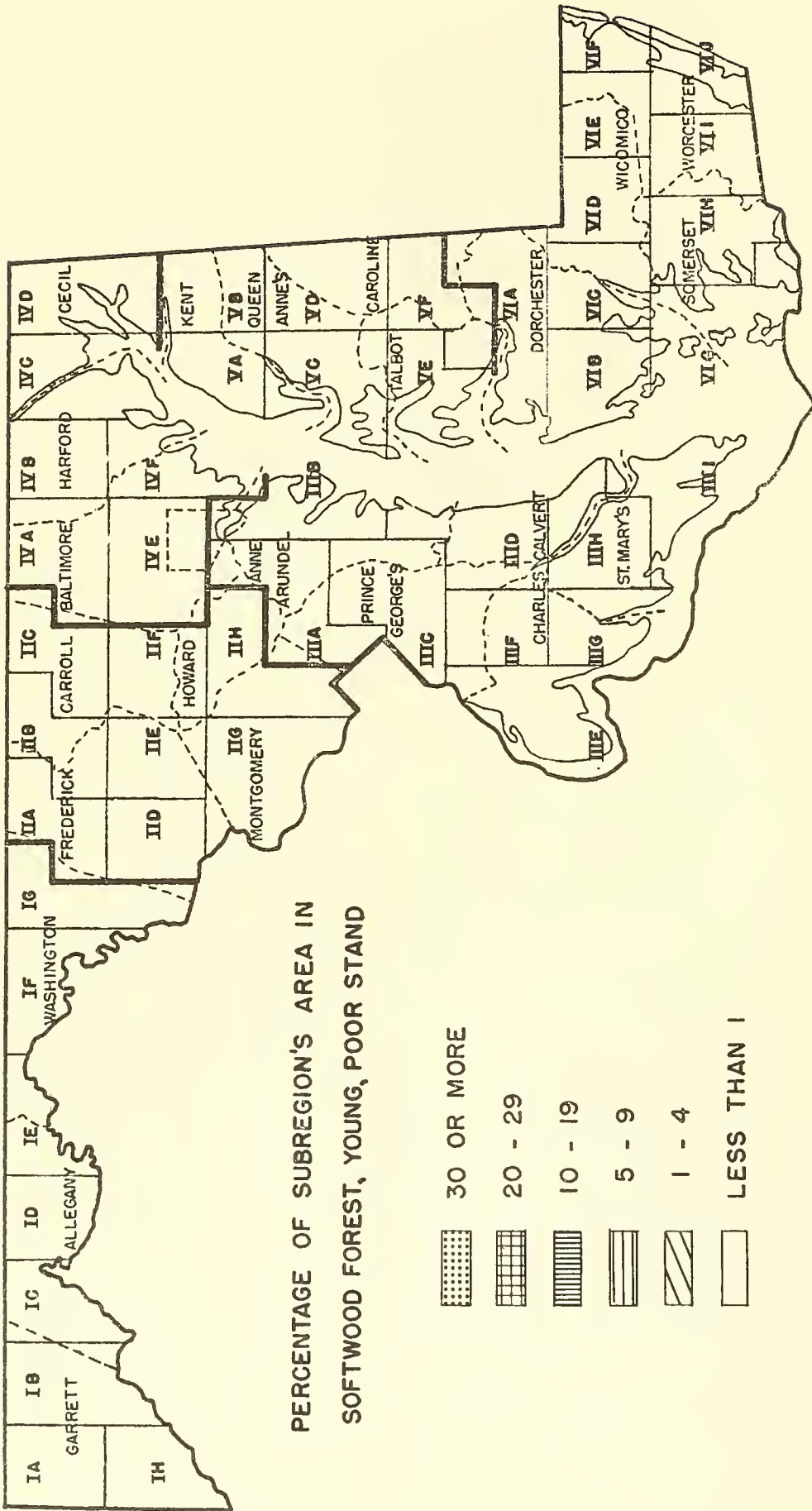


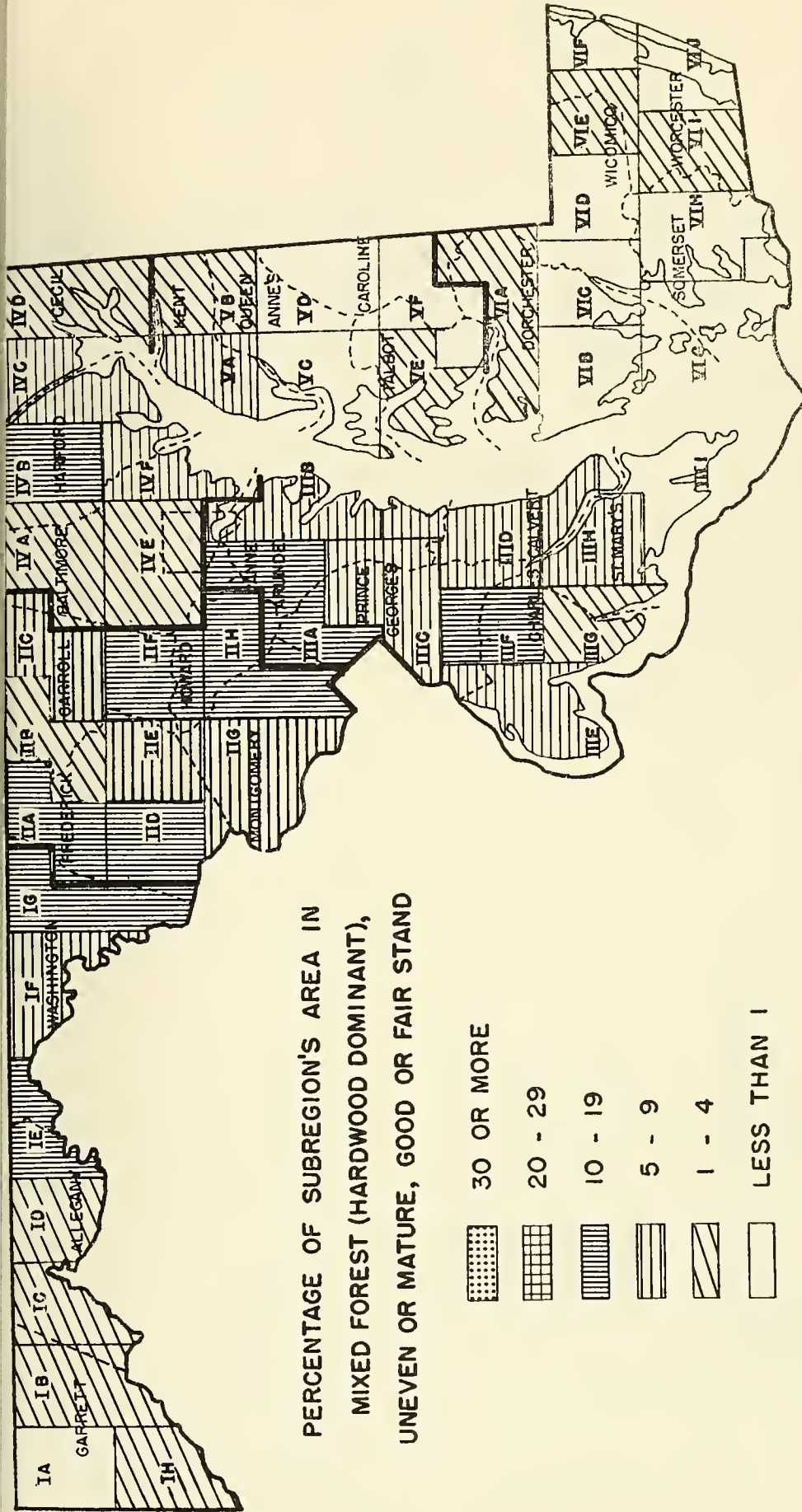


REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY



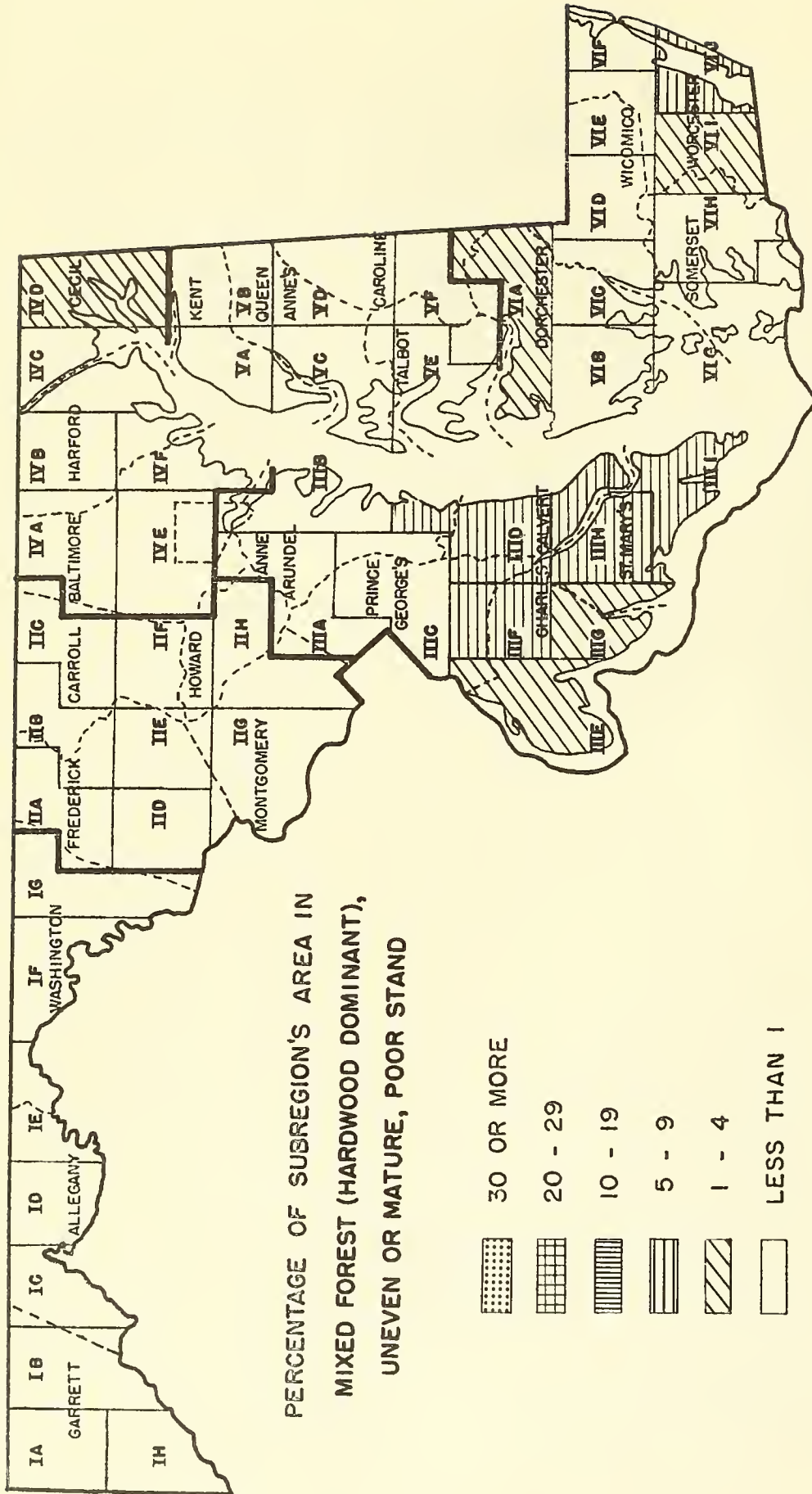




REGION: ROMAN NUMERAL
 SUBREGION: LETTER
 COUNTY: NAME

REGION BOUNDARY
 SUBREGION BOUNDARY
 COUNTY BOUNDARY



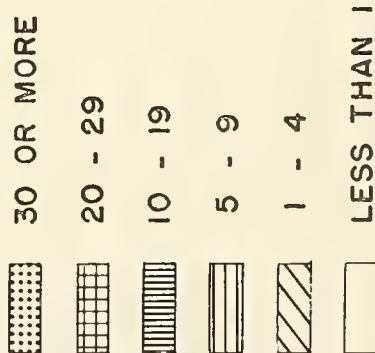


REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY

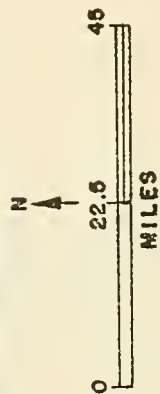


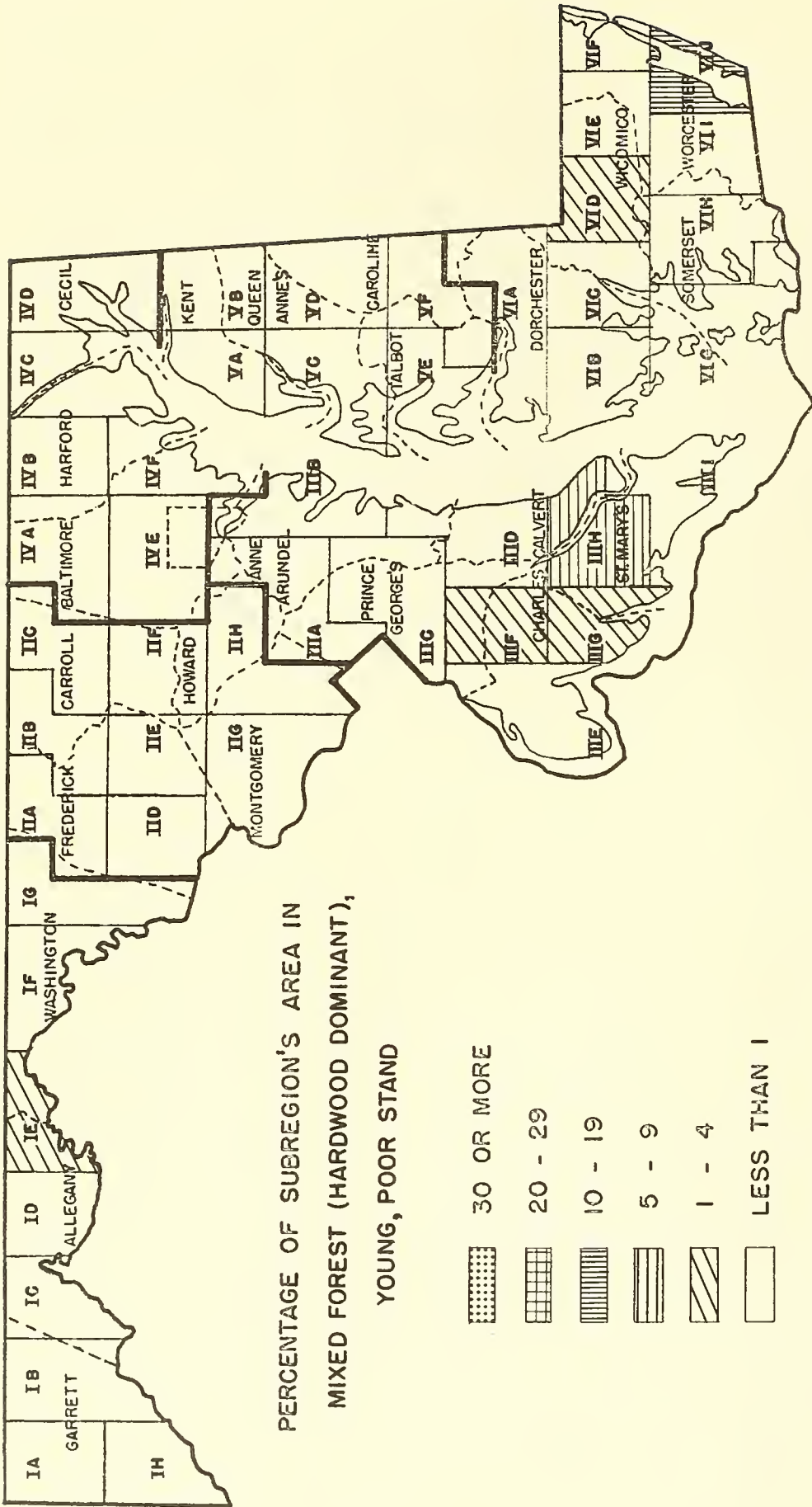
PERCENTAGE OF SUBREGION'S AREA IN
MIXED FOREST (HARDWOOD DOMINANT), YOUNG, GOOD
OR FAIR STAND



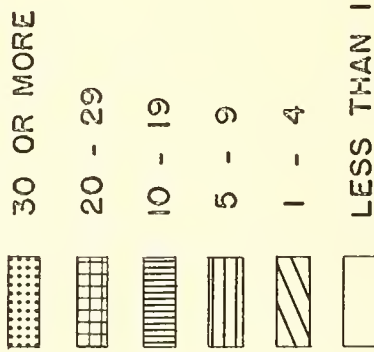
REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY





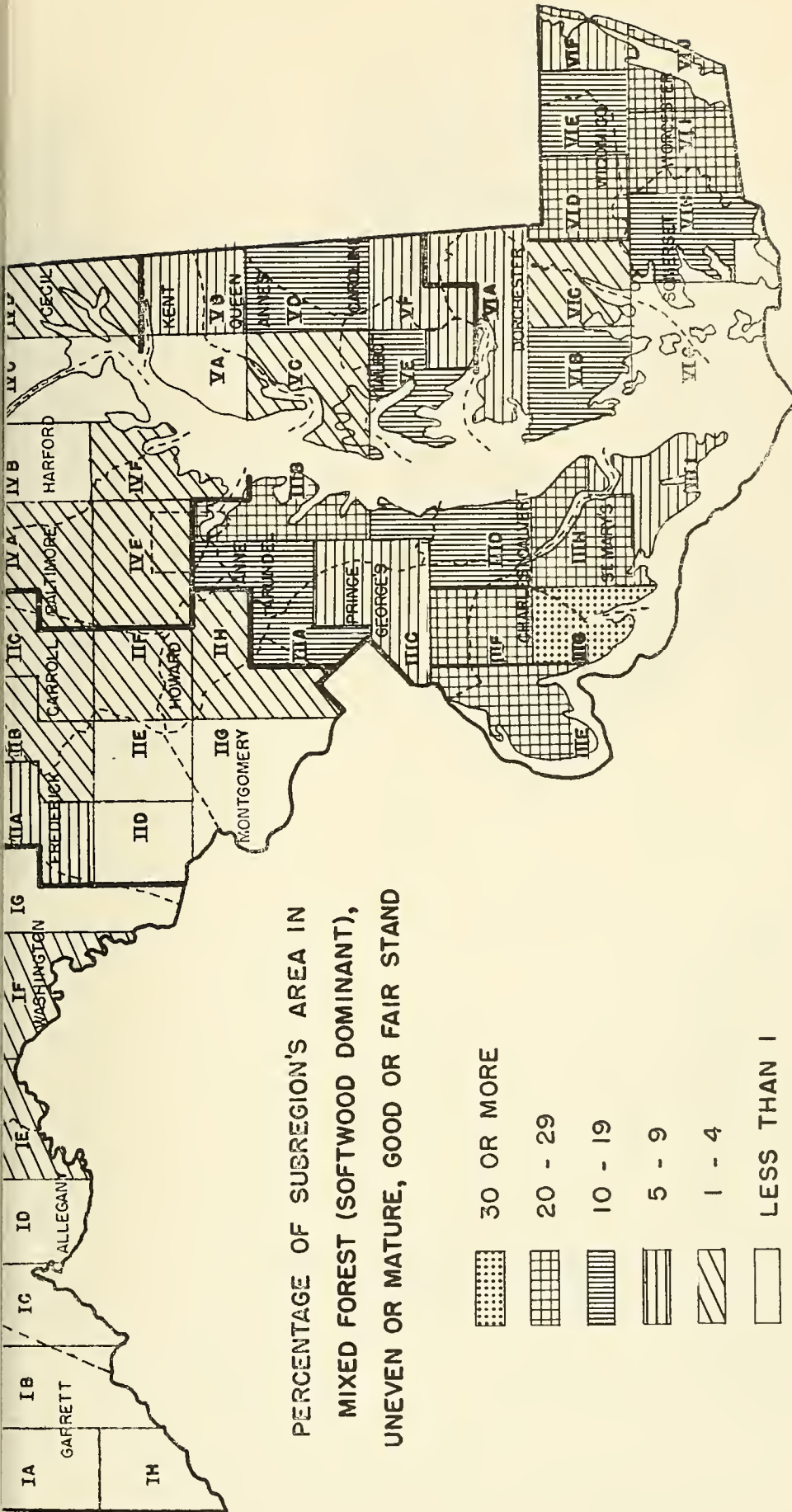
PERCENTAGE OF SUBREGION'S AREA IN
MIXED FOREST (HARDWOOD DOMINANT),
YOUNG, POOR STAND



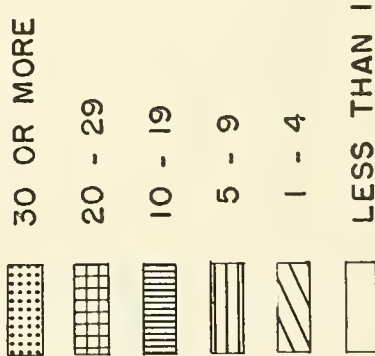
REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY





PERCENTAGE OF SUBREGION'S AREA IN
MIXED FOREST (SOFTWOOD DOMINANT),
UNEVEN OR MATURE, GOOD OR FAIR STAND

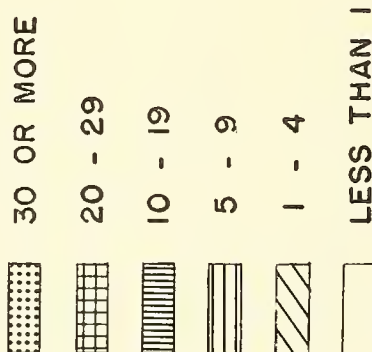


REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

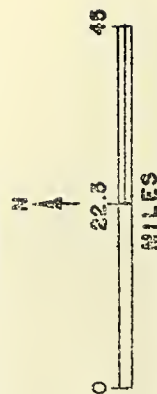
REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY

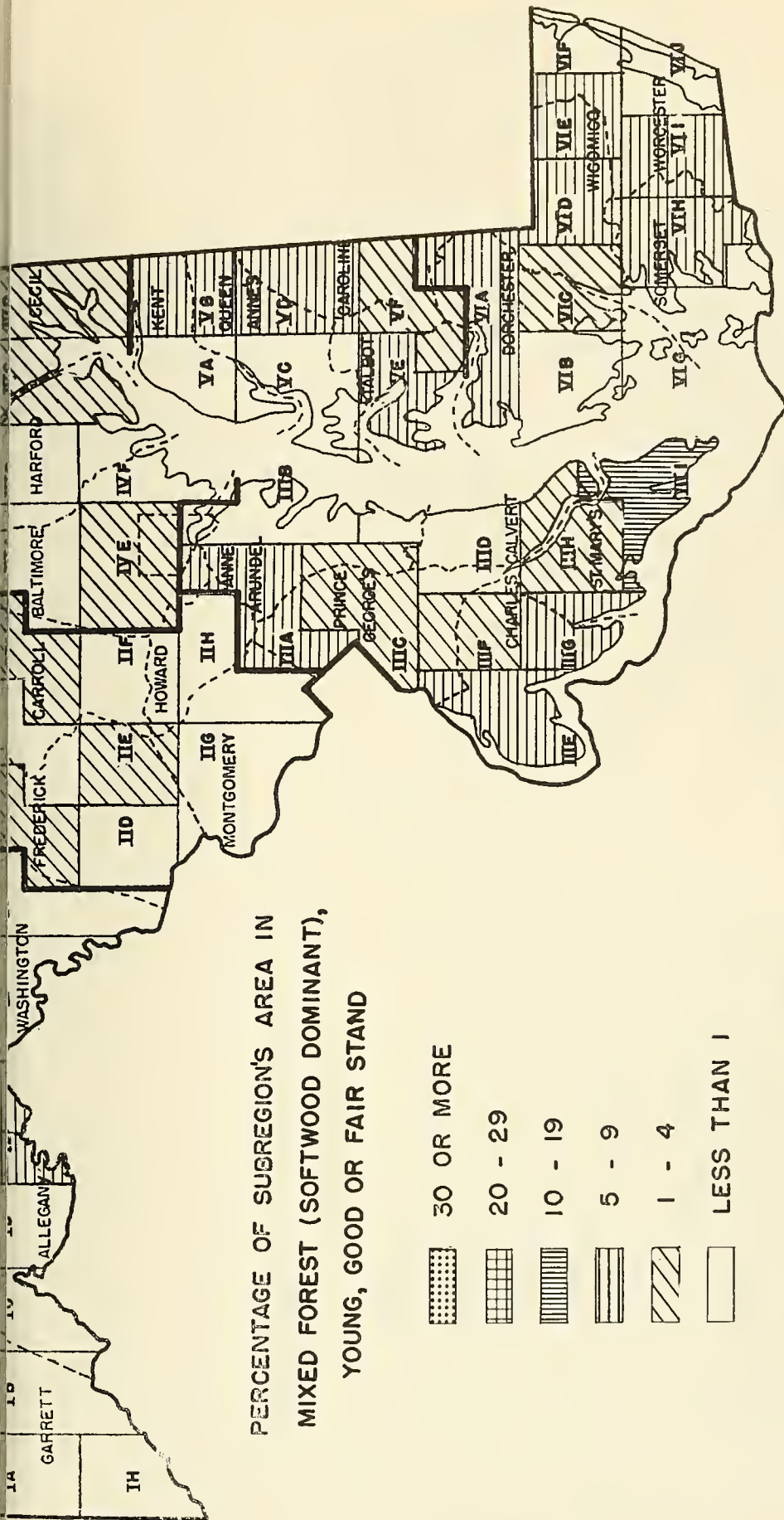


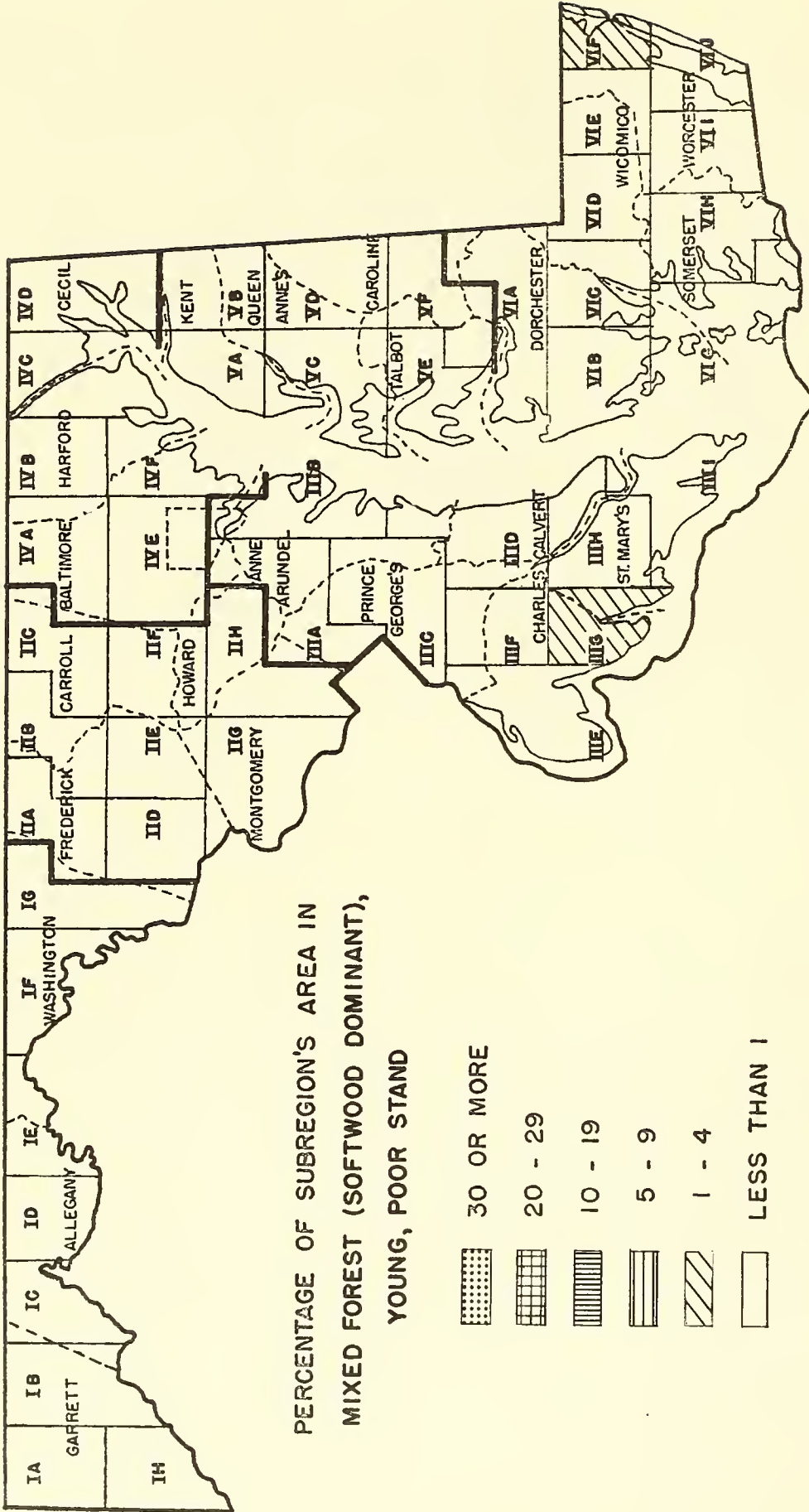
PERCENTAGE OF SUBREGION'S AREA IN
MIXED FOREST (SOFTWOOD DOMINANT),
UNEVEN OR MATURE, POOR STAND



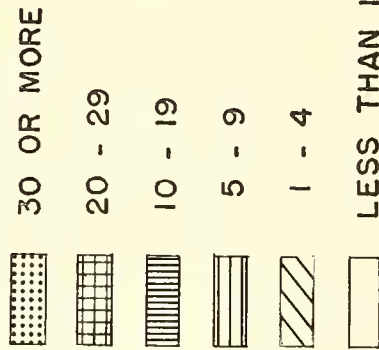
REGION: ROMAN NUMERAL	REGION BOUNDARY
SUBREGION: LETTER	SUBREGION BOUNDARY
COUNTY: NAME	COUNTY BOUNDARY







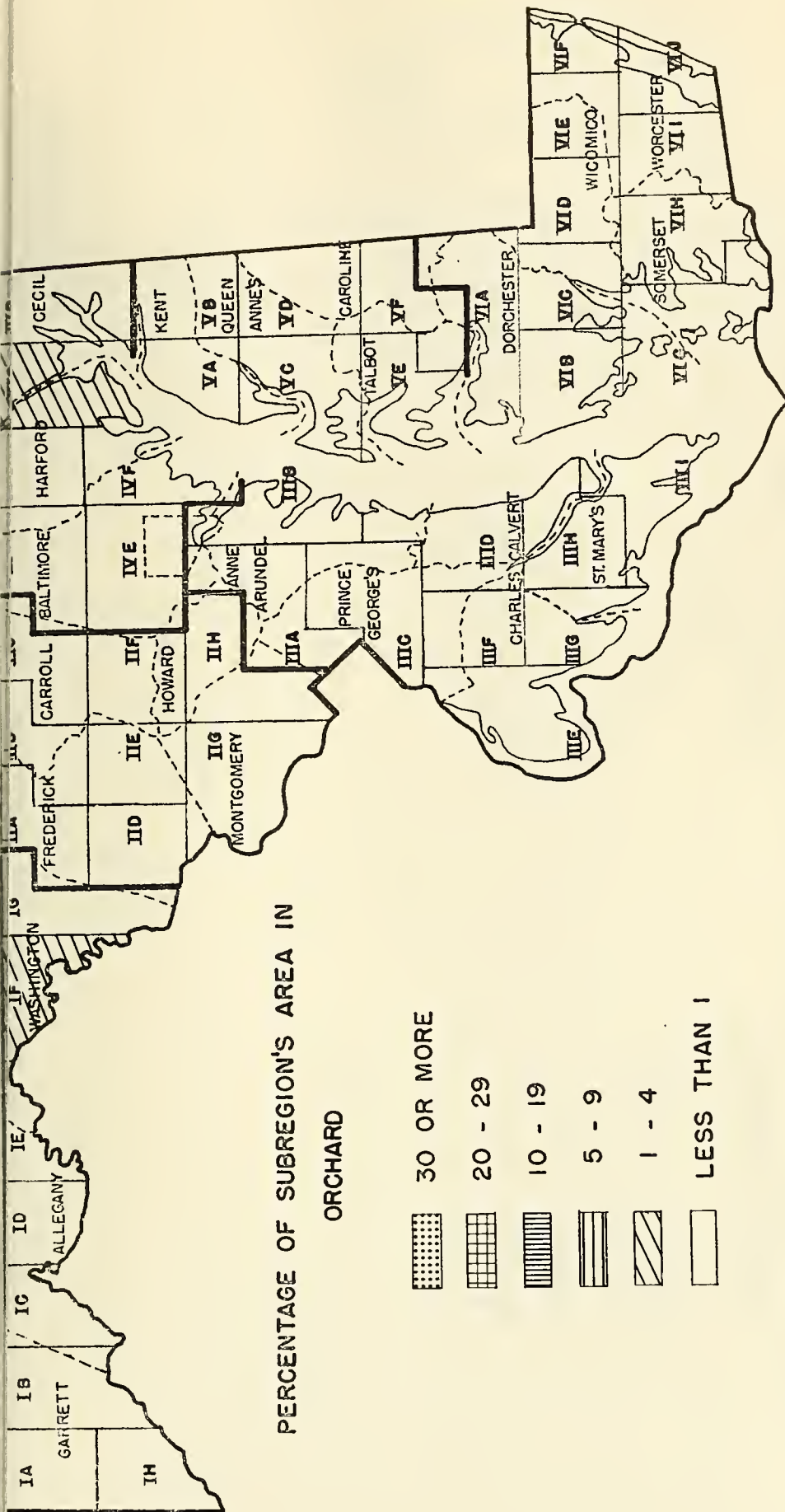
PERCENTAGE OF SUBREGION'S AREA IN
MIXED FOREST (SOFTWOOD DOMINANT),
YOUNG, POOR STAND

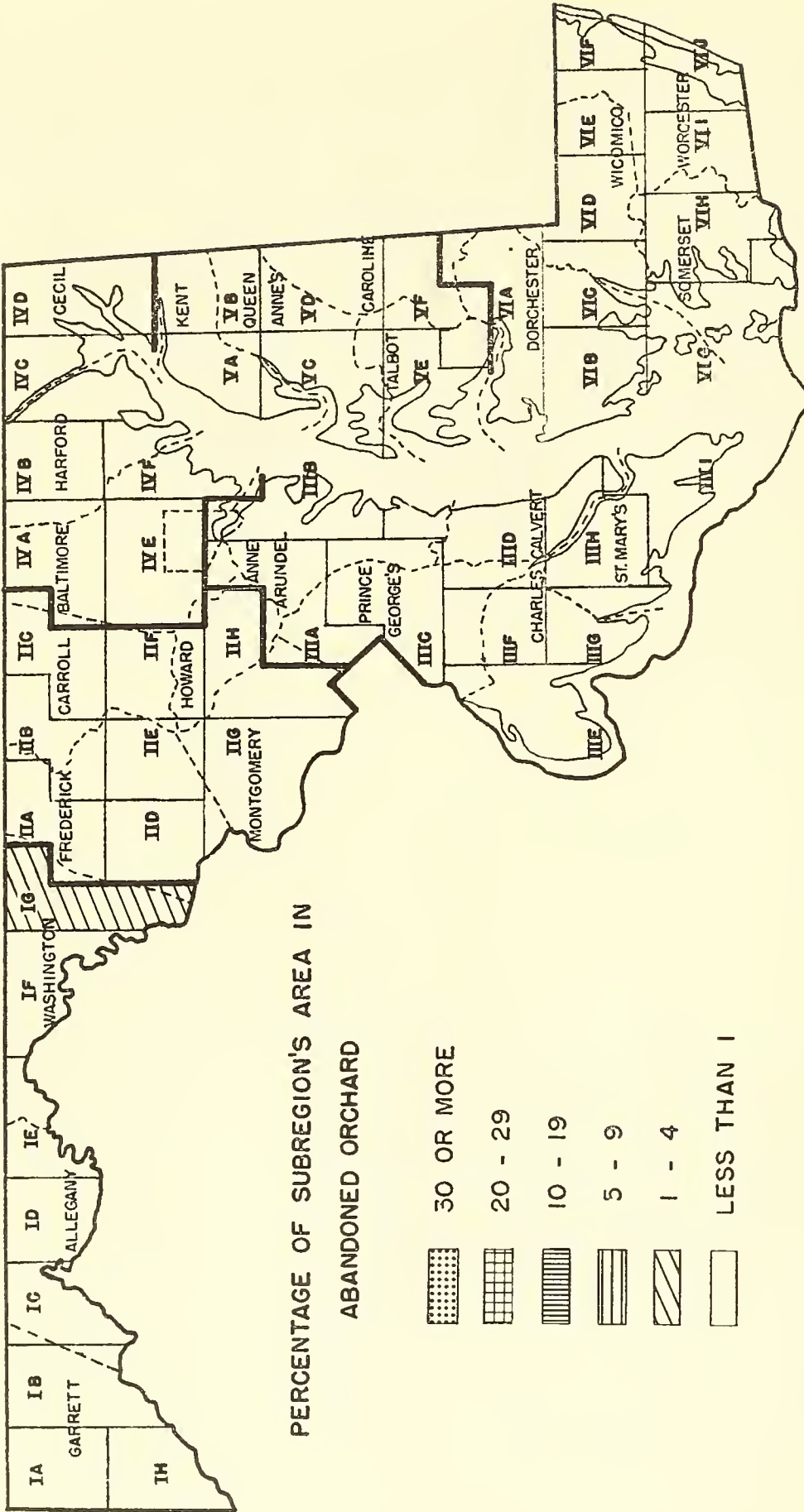


REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

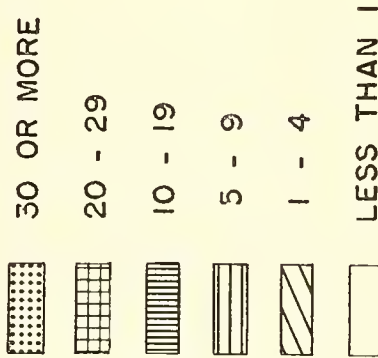
REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY





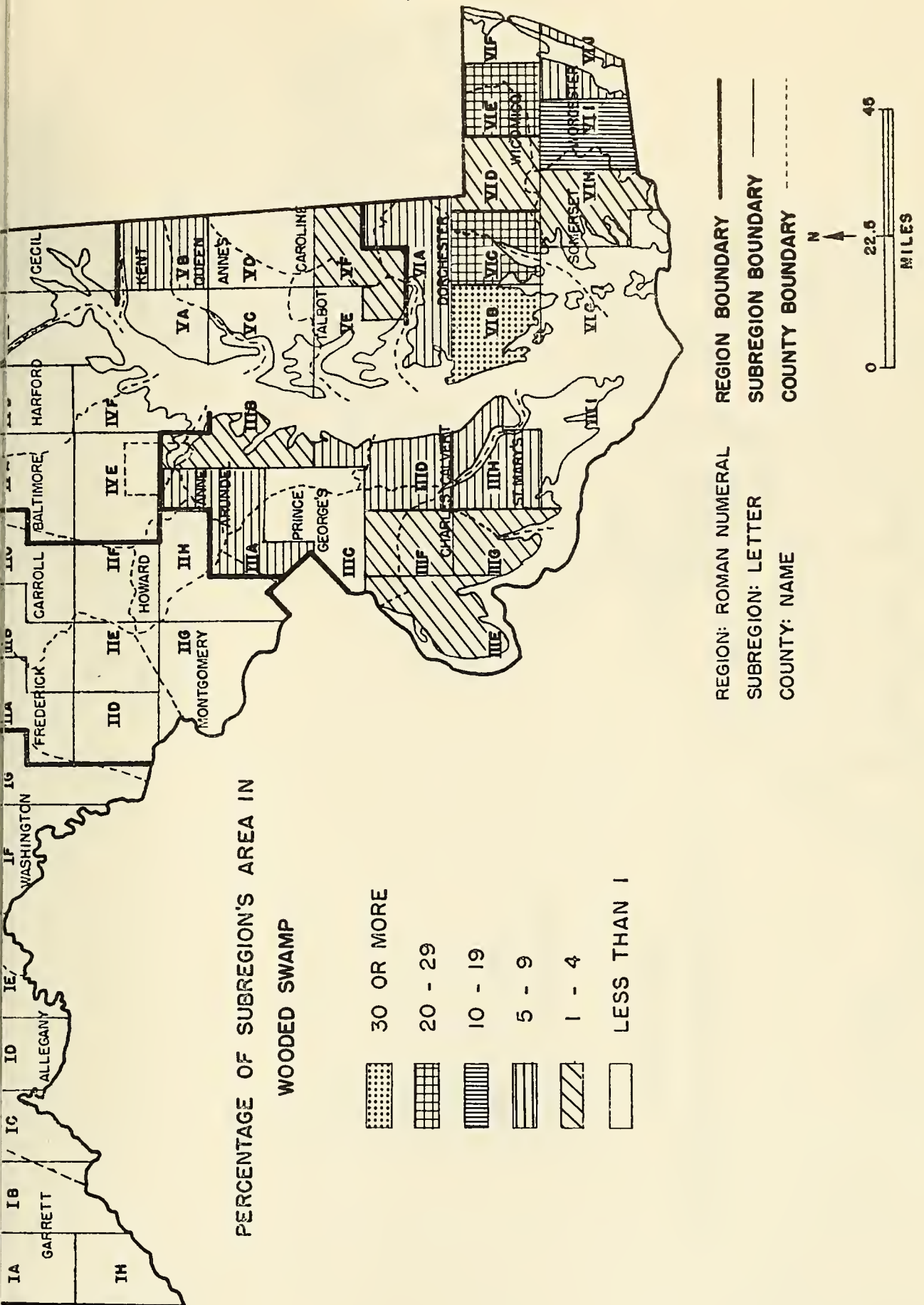


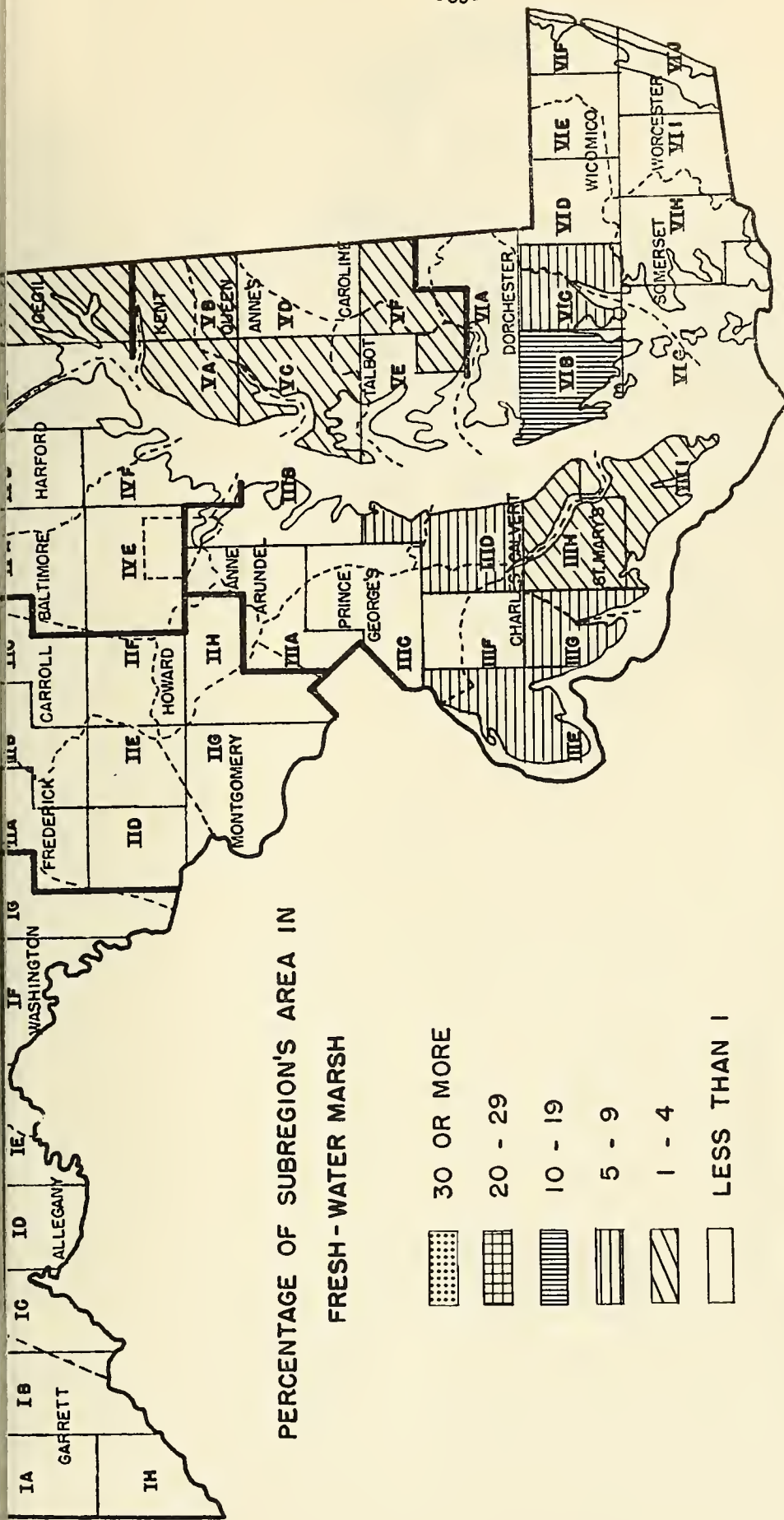
PERCENTAGE OF SUBREGION'S AREA IN
ABANDONED ORCHARD



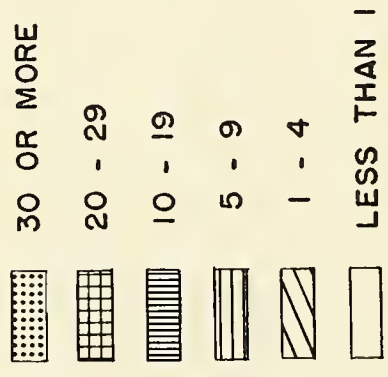
REGION: ROMAN NUMERAL REGION BOUNDARY ———
SUBREGION: LETTER SUBREGION BOUNDARY ———
COUNTY: NAME COUNTY BOUNDARY - - - - -





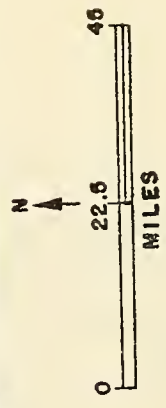


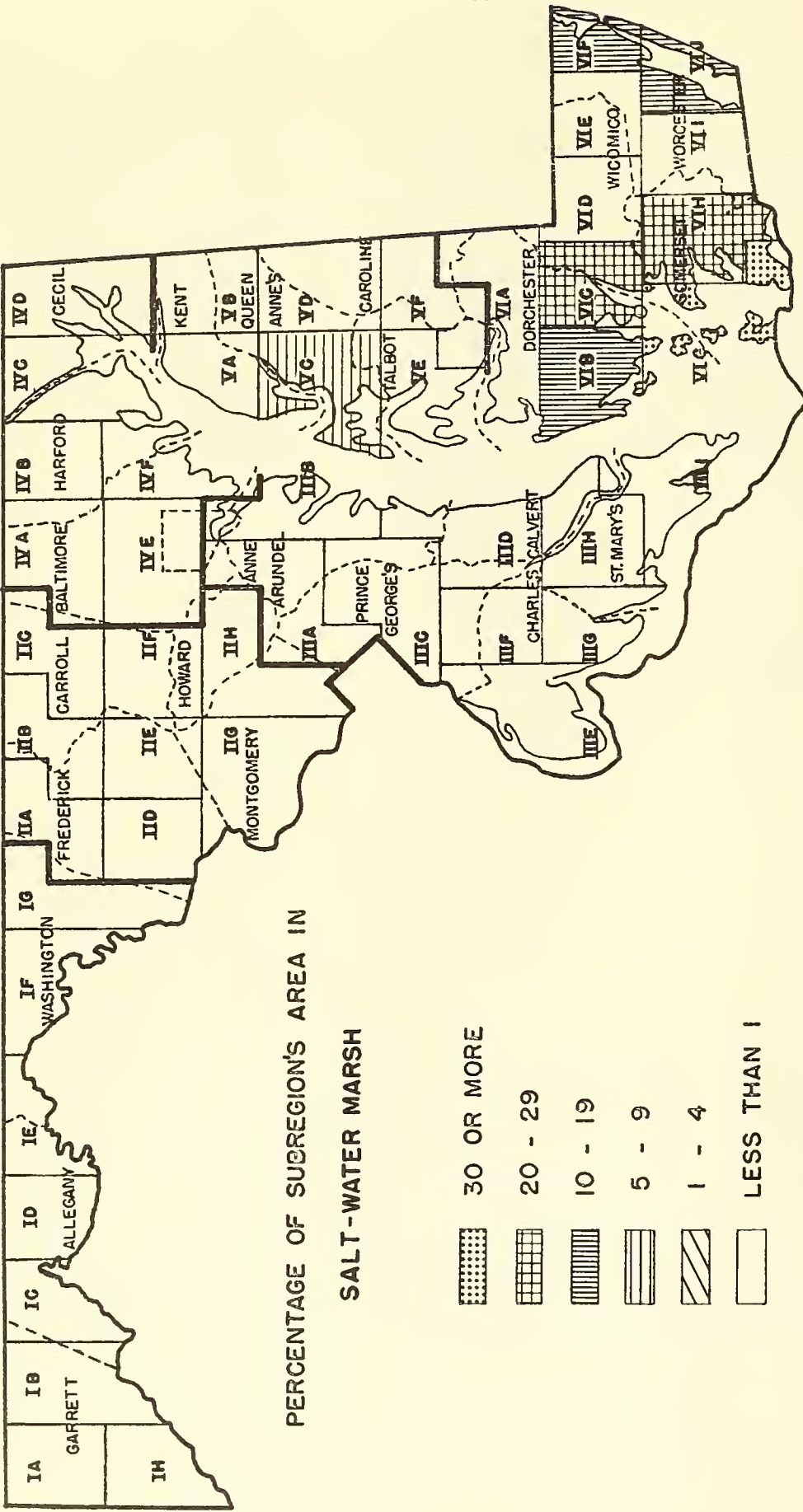
PERCENTAGE OF SUBREGION'S AREA IN
FRESH - WATER MARSH



REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

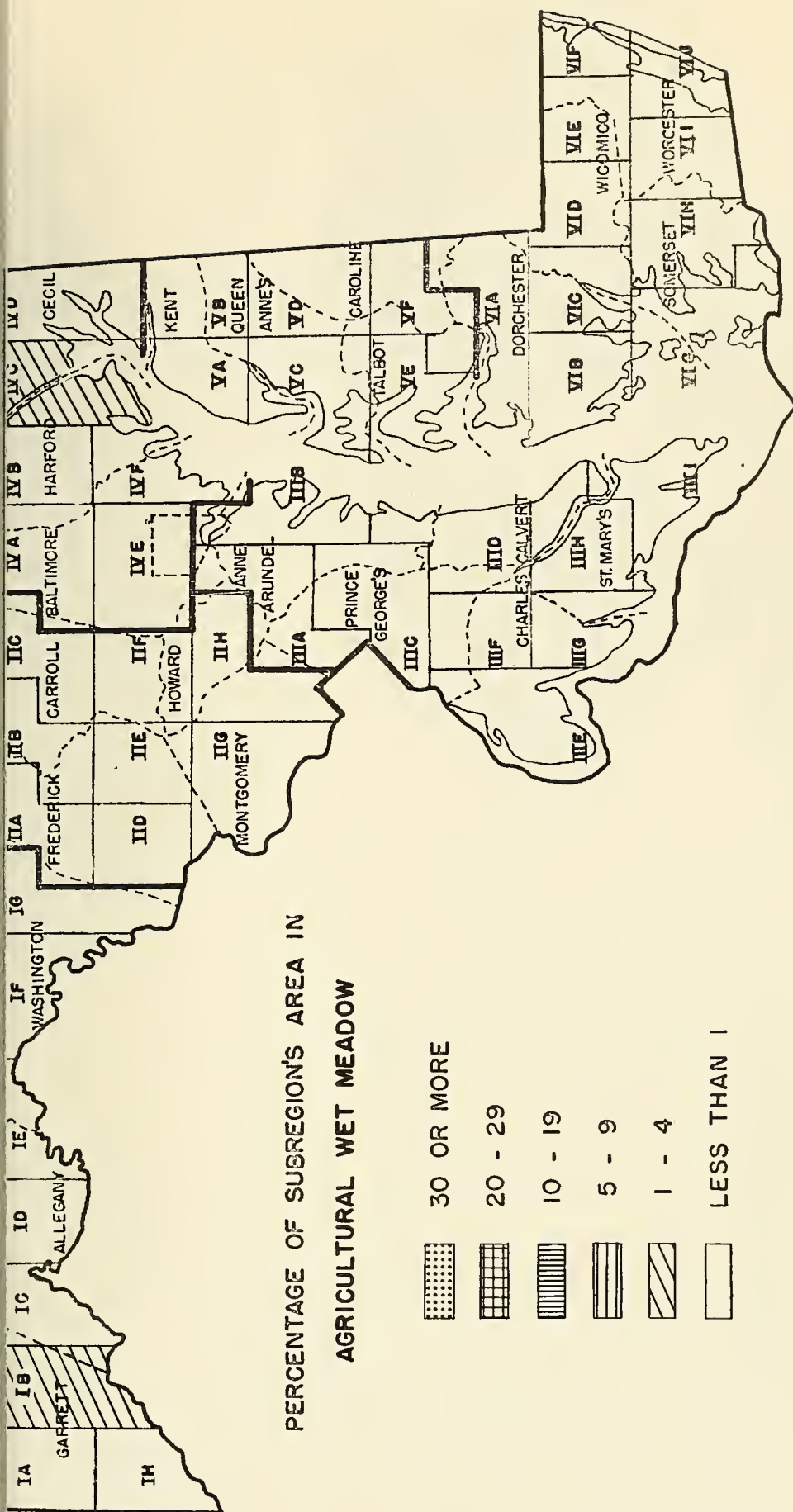
REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY



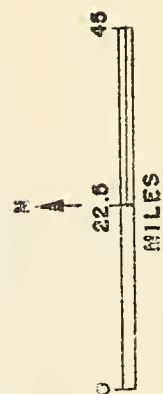


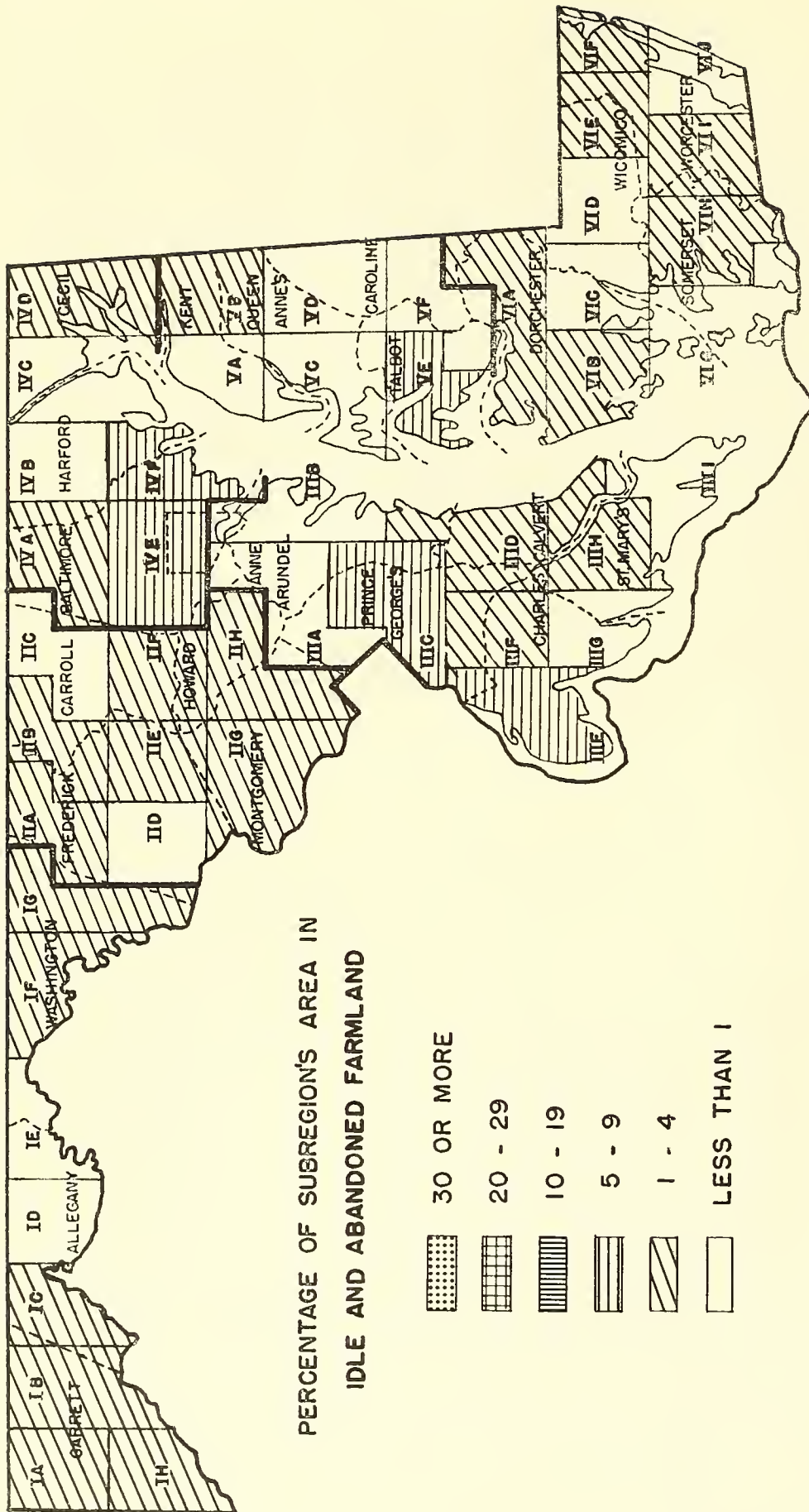
REGION: ROMAN NUMERAL REGION BOUNDARY ———
SUBREGION: LETTER SUBREGION BOUNDARY ———
COUNTY: NAME COUNTY BOUNDARY - - - - -



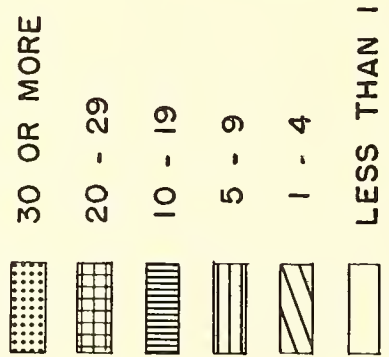


REGION: ROMAN NUMERAL _____
SUBREGION: LETTER _____
COUNTY: NAME -----





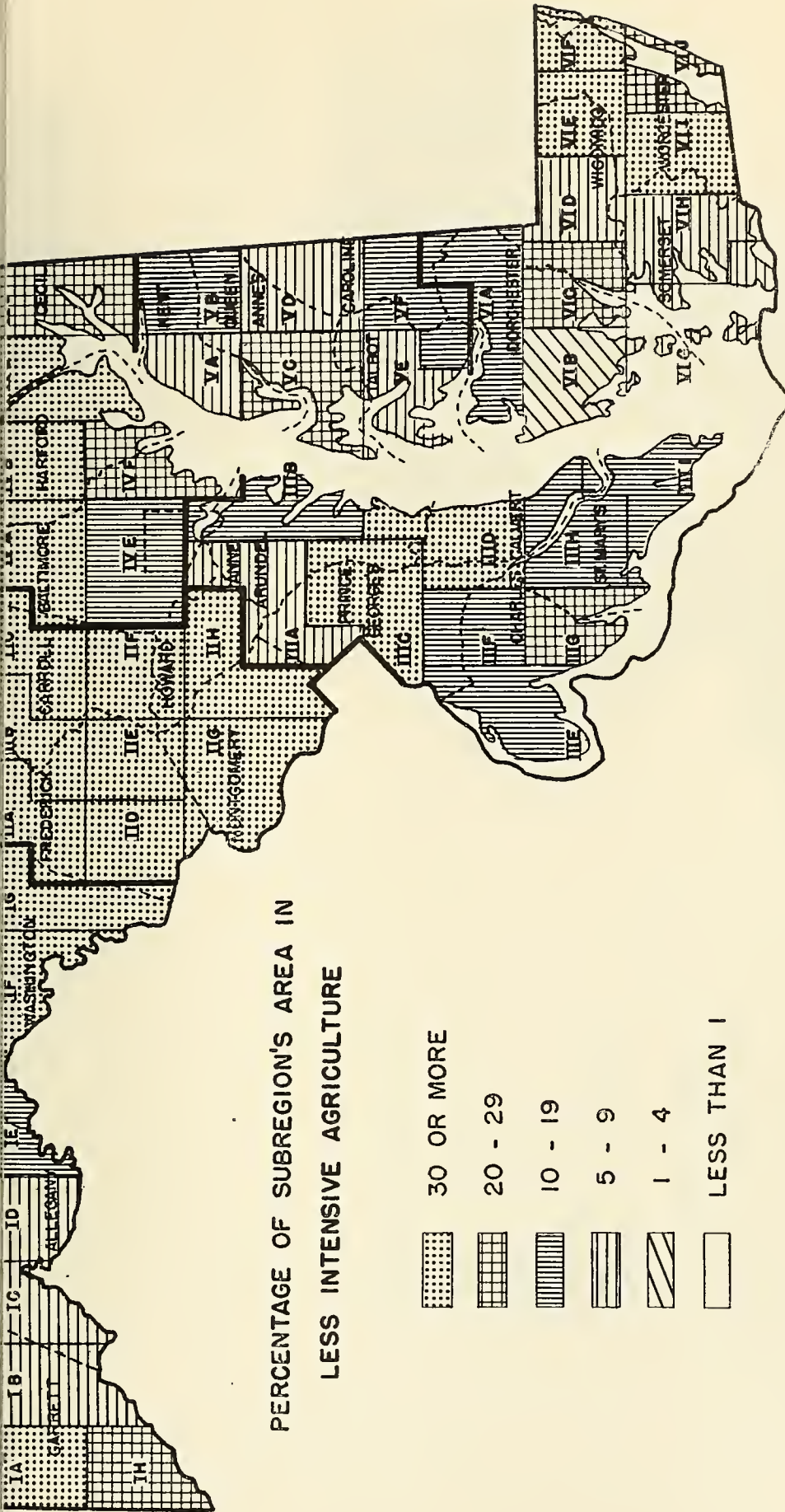
PERCENTAGE OF SUBREGION'S AREA IN
IDLE AND ABANDONED FARMLAND



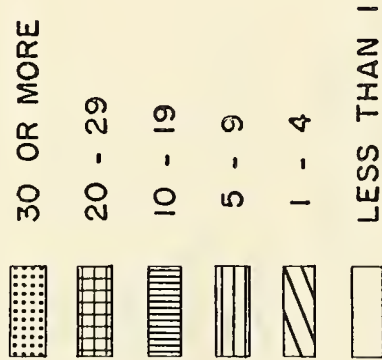
REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY





PERCENTAGE OF SUBREGION'S AREA IN
LESS INTENSIVE AGRICULTURE



REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME

REGION BOUNDARY
SUBREGION BOUNDARY
COUNTY BOUNDARY



REGION: ROMAN NUMERAL

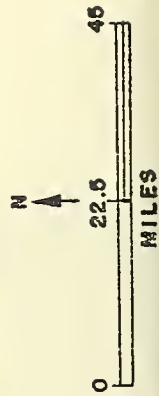
SUBREGION: LETTER

COUNTY: NAME

REGION BOUNDARY

SUBREGION BOUNDARY

COUNTY BOUNDARY



SPARSE VEGETATION

30 OR MORE

20 - 29

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REGION: ROMAN NUMERAL

SUBREGION: LETTER

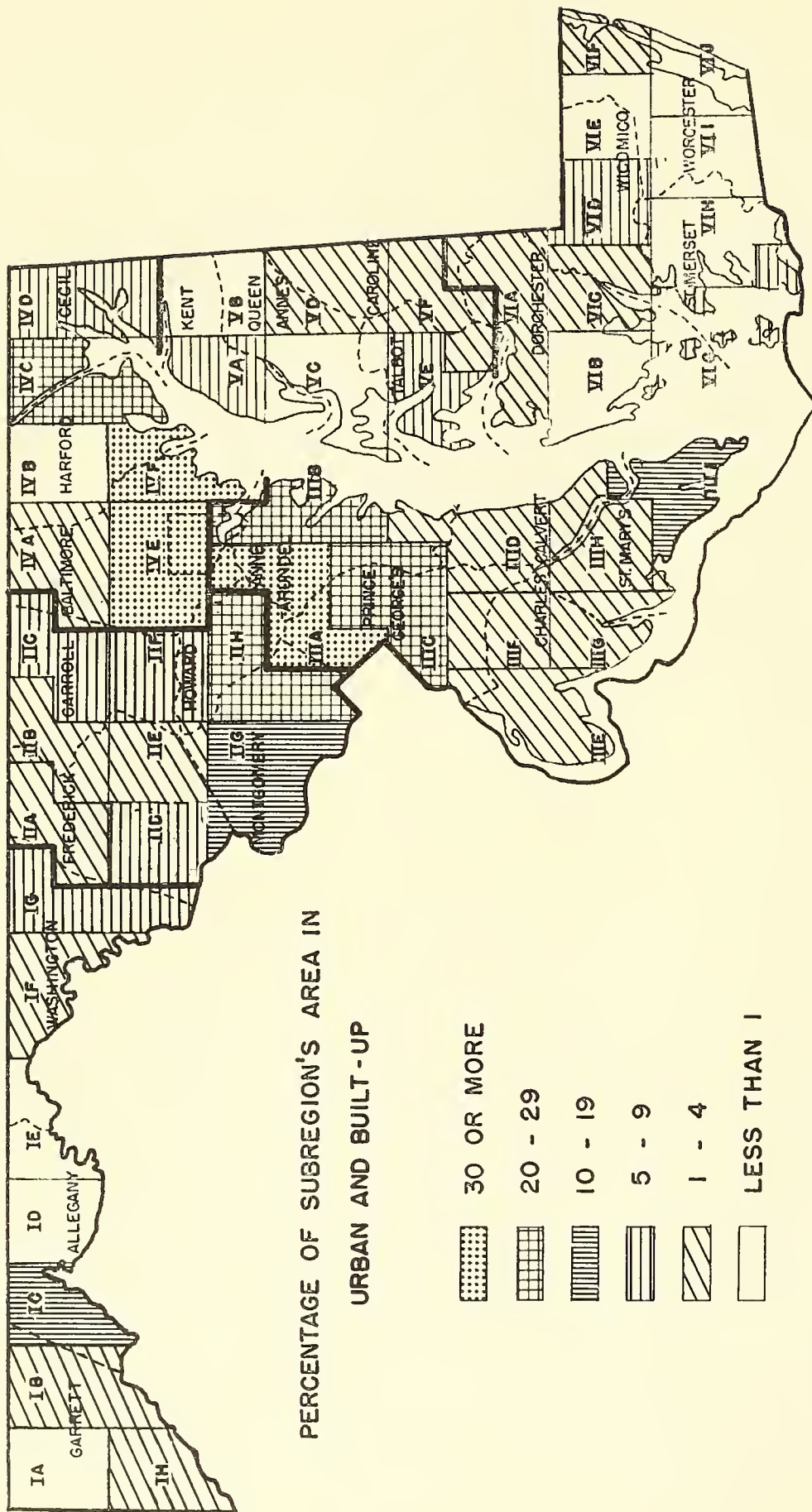
COUNTY: NAME

REGION BOUNDARY

SUBREGION BOUNDARY

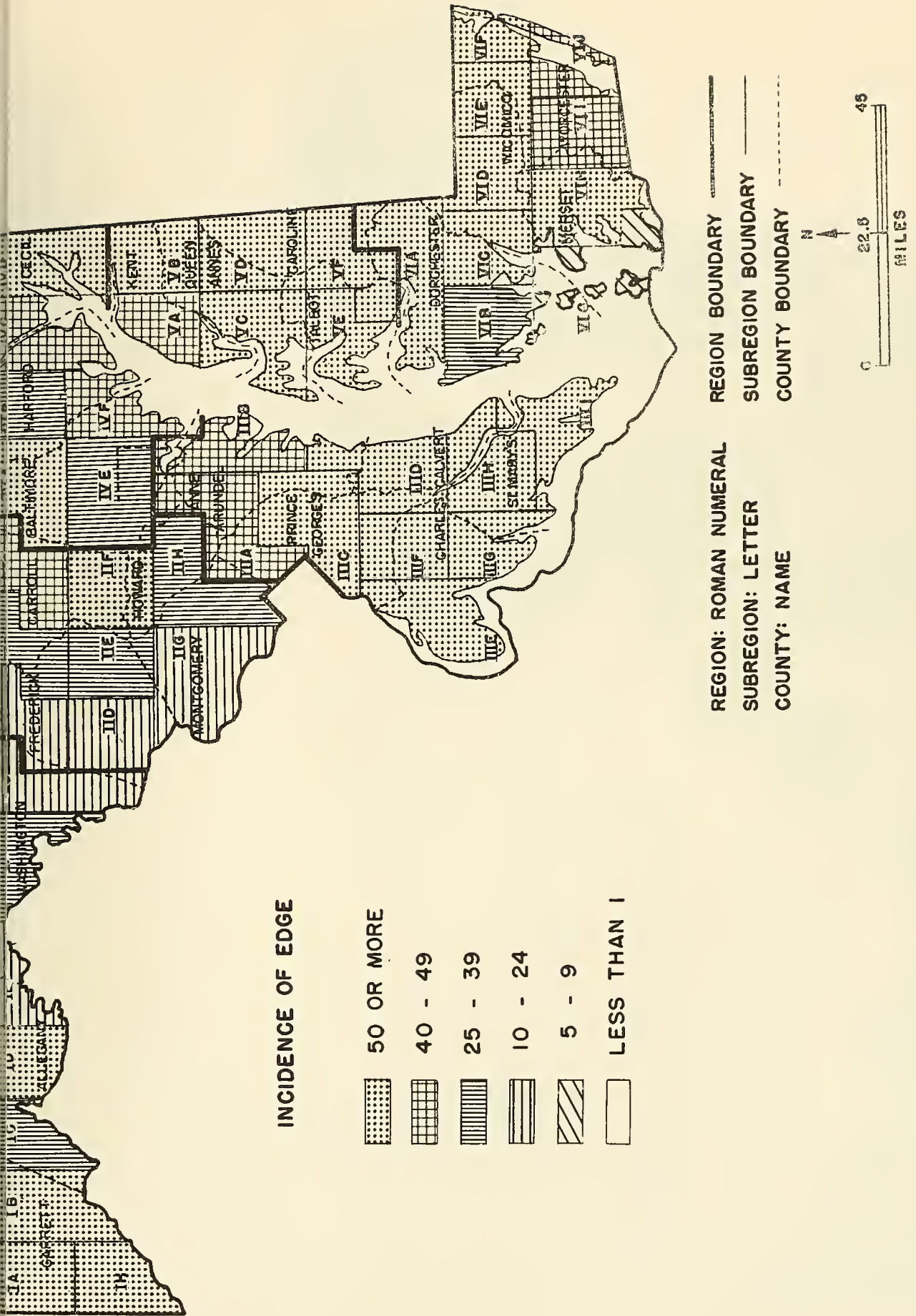
COUNTY BOUNDARY

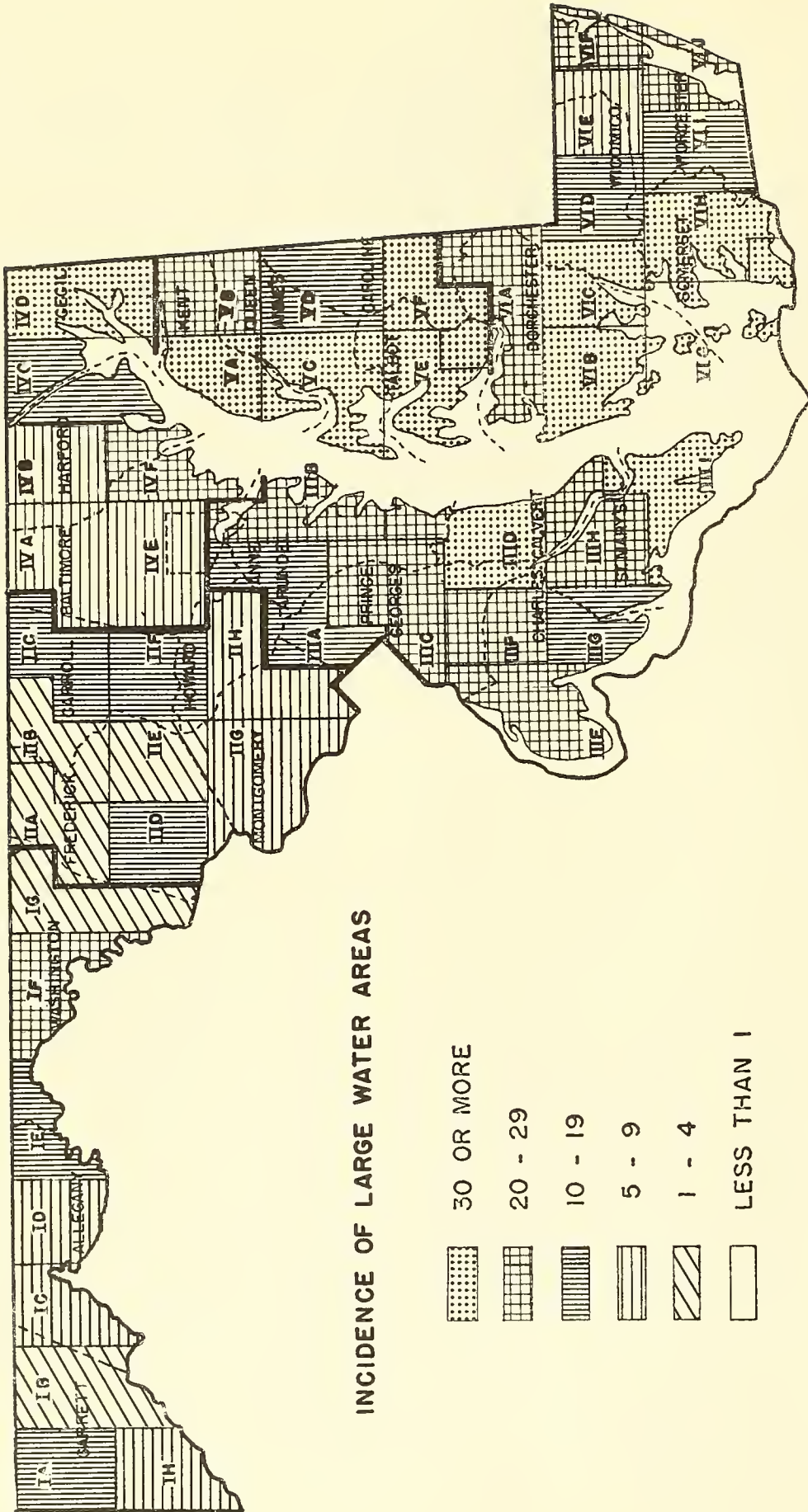




REGION: ROMAN NUMERAL	REGION BOUNDARY
SUBREGION: LETTER	SUBREGION BOUNDARY
COUNTY: NAME	COUNTY BOUNDARY







REGION: ROMAN NUMERAL
SUBREGION: LETTER
COUNTY: NAME



UNIV. OF MD. COLLEGE PARK



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